

Purchasing an Encyclopedia

12 Points to Consider



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Reference and Subscription Books Review Committee 1978-1979

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Introduction

This survey of 20 encyclopedias supplements the Reference and Subscription Books Review Committee's evaluations of individual general encyclopedias published in English and updates the Committee's March 15, 1969, article "Purchasing a General Encyclopedia." Unlike the Committee's reviews of individual encyclopedias, which contain extended analyses, this survey compares and contrasts encyclopedias on such major points as accuracy and subject coverage. The purpose of the survey is to assist adults in making informed decisions concerning the most appropriate encyclopedia for use in libraries and in homes. A 36-member panel of librarians and other experts associated with academic institutions and elementary and secondary schools assisted in the survey.

The encyclopedias covered were 1975 through 1977 editions made available by publishers. To facilitate analysis the sets were divided into the following five groups: (1) those intended for seven- through fourteen-year-old readers: *Britannica Junior Encyclopedia*, *Illustrated World Encyclopedia*, *New Book of Knowledge*, *Oxford Junior Encyclopedia*, and *Young Students Encyclopedia*; (2) those aimed at children about age nine through young adult, a slightly more mature audience: *Compton's Encyclopedia*, *Encyclopedia International*, *Merit Students Encyclopedia*, *New Standard Encyclopedia*, and *World Book Encyclopedia*; (3) single-volume or two-volume sets for a general audience: *Cadillac Modern Encyclopedia*, *Lincoln Library of Essential Knowledge*, *New Columbia Encyclopedia*, and *Volume Library*; (4) those designed more for home than for school or library use and appropriate for both young adults and elders: *Funk and Wagnalls New Encyclopedia* and *New American Encyclopedia*; (5) those multivolume sets containing more than 15 million words and directed to secondary school students and adults: *Chambers's Encyclopedia*, *Collier's Encyclopedia*, *New Encyclopedia Britannica*, and *Encyclopedia Americana*.

Functions of Encyclopedias

The first so-called encyclopedic work in English, Sir Thomas Elyot's *Boke of the Governour* (1531), was intended to "render superfluous the need to consult any other books." The growth of knowledge has made this an impossible goal. Encyclopedia publishers must now choose from among several more modest missions. The contemporary encyclopedia first of all continues to be an information store, a repository of facts. The majority of American encyclopedias fit this description but often perform additional functions. Using cross-references, an encyclopedia can provide pathways that ease the exploration of such universal concepts as truth, justice, and law. To a degree, the fifteenth edition of *Encyclopaedia Britannica* best accommodates this type of speculative inquiry. Alternately (or even additionally), an encyclopedia may stress the visual and may use illustrations that establish instant rapport with readers as well as explicate the text. The *New Book of Knowledge*, for example, uses photographs of children about the same age as its intended readers. An encyclopedia might resort to a tabloid style and alternate

text with graphics that "grab" the reader's attention but convey little information. If aesthetic appeal is a prominent concern, a set may incorporate opulent reproductions of artworks, many in full color, as is done by *New Caxton Encyclopedia*.

Besides illustrations, another feature emphasized by some encyclopedias (although not by most American sets) is instructional assistance. The intention is to make it possible for perusers of such encyclopedias to master the rudiments of a sport, craft, or technical procedure. More common in the U.S. are sets designed specifically to answer curriculum-related reference and study needs of students in elementary and secondary schools. *World Book* is an example. Finally, an encyclopedia may strive to instill national pride by incorporating propagandistic interpretations of facts, issues, current events, and trends, as have several major European encyclopedias. In contrast, American encyclopedias usually aim to avoid chauvinism and take care to present opposing views on controversial topics.

Points to Consider before Purchase

The Committee suggests 12 criteria to use in measuring the worth of an encyclopedia. These are authority, arrangement, subject coverage, accuracy, objectivity, recency, quality, style, bibliographies, illustrations, physical format, and special attributes. Some may be of more concern to potential users than others, depending upon the circumstances in which the encyclopedia will be read. Each characteristic is briefly explained below.

Authority. Publishing background, editorial strength, and contributors' knowledge and education form the basis for the authority in an encyclopedia. Authority is often taken for granted with established sets of good reputation and long tradition (e.g., *Encyclopaedia Britannica*). These sets handle such settled topics as philosophy or early Greece particularly well. Many of today's readers, however, value coverage of emerging subjects and seek encyclopedias that are up to date. In sets that emphasize such coverage, authority may depend on credentials of contributors and editors or general reputations of publishers, rather than on tradition.

Editorial policy determines what information to include in an encyclopedia, as well as the format in which information will appear. Potential purchasers of an encyclopedia should look at the listed credentials of both its editorial staff and its contributors and note their experience and education.

Arrangement. Encyclopedia entries may be arranged thematically or alphabetically word by word or letter by letter. A word-by-word arrangement is easier for most readers to use. It is helpful too if the alphabet is divided so that all of one letter (or all of a combination of letters) is in one volume. The advent of computer typography has, however, caused many publishers to adopt a letter-by-letter alphabetical arrangement in newer editions.

^a To assist readers in finding related information, encyclopedias employ various kinds of internal guidance systems, such as in-

dexes, cross-references, tables of contents, and boxed summaries at the beginnings of articles. These are especially important in encyclopedias to be used by students. A detailed analytical index is particularly helpful in drawing together information that may be scattered throughout the set. Artists, for example, may have entries of their own but also may be discussed in broader articles on painting or sculpture.

To test an encyclopedia's guidance system, consumers should pick four or five topics and see how the various keys lead to related information. To compare ease of use, the same topics should be looked up in similar encyclopedias.

Subject Coverage. To determine appropriateness of subject coverage, a reader must consider the type and range of topics included in an encyclopedia, the relative space allotted to various subjects, and the point of view of the editors. Are living persons covered or only those who have died? Are "hot" topics and contemporary issues covered or only those items that have been proven by the passage of time to be significant increments to the cultural heritage? Does the allocation of space to various subjects meet the purchaser's requirements? A purchaser interested in having at hand information on careers or nutrition, for example, would find an encyclopedia that gave most of its space to classical culture and philosophy to be of little use.

Any good contemporary encyclopedia covering the major areas of knowledge should devote approximately half of the total text to geography and the pure and applied sciences. Medicine and law also should be prominent because of public concern over such issues as abortion, euthanasia, and freedom of information. The arts, language, music, literature, philosophy, and religion should take approximately a third of the space, with social sciences, history, education, sports, and miscellaneous information accounting for the rest. Encyclopedias for children will, of course, devote more attention to such topics as pets, health, and handicrafts than will adult encyclopedias.

Accuracy. Readers often take for granted that information in an encyclopedia is accurate and truthful, but this should never be assumed. Encyclopedias often derive their information from sources that may or may not be error-free. False or deceptive statistics, incorrect dimensions, mangled statements of scientific theories, faulty biographical information, and erroneous dates can be found in all encyclopedias. Generally, however, editors take special care to keep as accurate as possible articles on such familiar topics as American politics, space exploration, major scientific breakthroughs, and geography. Before investing in an encyclopedia, prospective buyers should inspect topics with which they are familiar to see if articles on them are precise and accurate.

Objectivity. Space limitations in general encyclopedias make representation of all legitimate views on controversial topics (e.g., abortion, psychology, socialism, etc.) an impossibility. A buyer therefore requires astute editorial judgment from the encyclopedia as to which conflicting views to include. Racial and sexual biases should also be considered. Racial bias has largely been countered by adding biographies of nonwhite persons and articles on minority history and civil rights, by revising accounts of slavery, and by eliminating denigrating statements. However, sexual bias lingers on in many encyclopedias. The reader should be wary of the stereotyping of women, overuse of the pronoun *he*, and single gender characterizations of various vocations and professions, e.g., exclusively male airline pilots, police officers, and brain surgeons, or female secretaries, nurses, and elementary schoolteachers.

Less easy to spot in an encyclopedia is bias within coverage of particular subjects. The fields of psychology, anthropology, economics, art, music, and literature are open to prejudicial treatment because taste could govern the inclusion or exclusion of topics and individuals. Articles signed by subject experts on noted authorities may be worthy of respect, but the consumer should be cautioned. In some encyclopedias, articles may be

only remotely attributable to the designated author. Further, even subject experts have points of view, and bias may creep into an article inadvertently. Consumers should examine specific articles in an encyclopedia to see to what extent opposing doctrines are given fair and balanced consideration.

Recency. There are facts that do not "date." Population statistics, elections, important scientific breakthroughs, deaths, sports records are among the many topics on which out-of-date information is misleading. The fact that an encyclopedia is described as "revised" does not mean that *all* data were updated. Before investing in an encyclopedia, a would-be purchaser should check the currency of information on topics with which he or she is familiar.

Quality. Factors that determine the quality of individual articles in an encyclopedia include many of the characteristics discussed here. A crucial factor, however, is the length of articles. While an encyclopedia that attempts to cover the world of knowledge in specific 200-word segments may be serviceable, it is unlikely to provide enough background for an eight-year-old and may seem patronizing to the older student or adult. The length of articles should vary with the importance and complexity of the subject. A 500-word exposition is required for effective treatment of many topics. Within each article, data should be presented in a precise, logical fashion without ambiguity or oversimplification. The information selected for inclusion should be relevant to the needs of the encyclopedia's audience. Biographies should provide substantive summaries of important persons' lives, focusing on concepts and contributions rather than on dates and degrees. If the treatment of biographies and such complex topics as Israel, civil rights, solar energy, or abortion is satisfactory, the quality of the encyclopedia as a whole will usually also be acceptable to the prospective buyer.

Style. The hallmarks of effective encyclopedia style are liveliness, orderliness, coherence, simplicity, and directness. Style is the image of the writer's mind. Even though the subject matter of an encyclopedia is largely factual, the reader is entitled to language that is lean and lucid. Moreover, the language should be appropriate to the subject and to the encyclopedia's intended audience. Technical and advanced terms should be defined when they first appear. Difficult topics should be introduced gradually and with sufficient explanation, so that they do not confuse or overwhelm the reader. In addition to providing information, an encyclopedia article should be a pleasure to read.

Bibliographies. Many encyclopedias include with their articles bibliographies or lists of suggested readings as guides to further study. Listings of books, magazines, films, or other items that are grouped on the basis of difficulty are particularly useful. The works listed should be current, relevant, and generally available to the encyclopedia's audience. They should appear at the ends of articles instead of being segregated in a separate volume. For all encyclopedias except those intended for very young children, bibliographies are essential.

Illustrations. Art reproductions, drawings, maps, portraits, photographs, diagrams, and other graphics are a stimulating, informative, and often instructional component of encyclopedias. In assessing the quality of an encyclopedia's illustrations, a prospective buyer should determine whether the illustrations are clear, pertinent, informative, and pleasing and whether they are placed in proper relation to the treatments of the subjects they depict. If the pictures are in color, their tones should be close to those of their originals. The size of the illustrations should be appropriate to their subject matter; fresco paintings, for example, should not be reduced to the size of postage stamps. Captions should be complete enough to preclude confusion or ambiguity. Art reproductions, for example, should be identified at least with the titles of works and names of artists. Portraits of living subjects should be recent and convey distinctive personality traits. Old photographs are too often supplied for contemporary figures: these may confuse readers

as to the true age of persons. The use of color illustrations can enhance the attractiveness of an encyclopedia, especially if the material is well-integrated with black-and-white or two-tone photographs. But consumers should be alert to the possibility that pictures may be substituting for text that would have been of greater intrinsic value.

Physical Format. The binding, typography, and design of an encyclopedia are also important. First, the buyer should notice whether the encyclopedia is durably and attractively bound. Is the binding strong enough in relation to the size and weight of the volumes? Will it survive the stresses of use and possible abuse? Are letters and numbers on spines easily visible? Test a volume to see whether it lies flat when opened. The centers of double-page maps and illustrations should not disappear into the binding. The binding should be washable. The paper should be opaque so that the print on one side of a page does not "bleed" through on the reverse. Since a glossy paper can tire the eyes, a matte or semigloss finish is preferable. The type should be clear and legible. A variety of sizes and spacing should be used to avoid monotony. Consumers should look for a set that is inviting to read as well as physically durable.

Special Attributes. Some encyclopedias have unusual features, such as *The New Encyclopaedia Britannica's* structure, comprehension tests that can be self-administered, reference services, separate atlases, or how-to-do-it articles, that are intended to lure hesitant buyers. Consumers should weigh very carefully the added value of such features and not let their

presence distract them from assessing the encyclopedia's main objectives and quality.

A Word about Children's Encyclopedias

In addition to the criteria described above, there are special problems associated with encyclopedias published for children. For example, the problem of vocabulary level must be taken into account. Some encyclopedias attempt to tie their articles to school curricula by matching the vocabularies of certain articles to the capabilities of the students who are most likely to read them. Other encyclopedias enforce a narrow vocabulary range for all articles. The first approach is naturally more effective in school and public libraries. For home use, each type of encyclopedia has its advantages. But multilevel encyclopedias, with some articles using more advanced vocabularies, will accommodate a child's growing reading skills. Since most encyclopedias are intended to last at least five years, a child is less likely to outgrow a multilevel set within that period of time.

It is time now to turn to the profiles of our 20 encyclopedias. They are arranged alphabetically within the groups described earlier. Except in the case of children's sets and those containing only one or two volumes, the groupings may appear to be somewhat arbitrary and indeed may overlap in their intended audiences. The wise purchaser in need of a multivolume encyclopedia for young adults should compare both within and among categories in order to make an informed decision.

Reviews

Britannica junior encyclopaedia for boys and girls.

15v. Chicago, Encyclopaedia Britannica, Inc. [c1934-1975]. illus. maps. plates. 24cm. sturdite; to schools and libraries only, \$169.95.

Authority. Although published by Encyclopaedia Britannica, Inc., *Britannica Junior* is neither similar to nor related to *Encyclopaedia Britannica*. Weedon's *Modern Encyclopaedia*, first published in 1931, is *Britannica Junior's* direct ancestor. *Britannica Junior* began to appear in 1934 and established the present 15-volume format in 1947. Editor Marvin Martin is assisted by an advisory committee made up mostly of Chicago-based teachers and educational specialists and a group of consultants drawn from university faculties throughout the country. The 795 contributing editors and writers include a mixture of subject experts, writers of children's literature, and teachers and curriculum coordinators. Some of the more eminent contributors are John Tuzo Wilson (*Geophysics*), Marvin Wolfgang (*Ghetto and Juvenile Delinquency*), Richard L. Evans (*Mormonism*), Ely Culbertson (*Bridge*), and Mario Pei (*Slang*). None of the articles in the set, however, is signed.

Arrangement. *Britannica Junior* is arranged alphabetically, letter by letter. There are *see*, *see also*, and title cross-references within and at the end of articles. The Ready Reference Index in volume 1 serves as the principal guide to the set. In addition to index terms for the articles in the rest of the encyclopedia, the Index contains brief, factual information on 20,000 other topics. This resembles somewhat the Micropaedia section of *Encyclopaedia Britannica 3*. The panel found the Index to be quite accurate, although occasionally subject coverage within articles was not represented. All in all, because of its reliability and convenient placement in one volume (instead of dispersed as in

New Book of Knowledge and *Compton's*), the Ready Reference Index is quite successful.

Subject Coverage. In *Britannica Junior* science and nature study, biography, sports, geography, and history are favored over the fine and performing arts. Biographies appear to be current and more numerous than in any of the other sets in group one with the exception of *Illustrated World*. As mentioned earlier, the Ready Reference Index supplements the 4,100 articles in the encyclopedia proper, with three-to-five-line statements about an additional 20,000 topics. Although these entries enlarge the scope of the work, their brevity allows for only skeletal descriptions. For example, Isadora Duncan and Eleanor Duse are precisely characterized in the Index, but most political figures are treated gingerly. Spiro Agnew's note excludes any mention of his resignation or tax evasion; Frances Perkins' paragraph omits her position as industrial commissioner of New York and her participation in the creation of the Social Security system. Articles in *Britannica Junior* are moderately sized but only about half as long as those found in *The New Book of Knowledge*. Generally the geographical articles are longest (averaging about 1,200 words) and miscellaneous subjects run around the 1,000 mark, while biographies tend to be more concise, about 350 words.

Accuracy. Generally topics in the sciences, humanities, and social studies are factually reliable. Any errors that do occur seem to be caused by failure to update material. For example, the statement in the article *Athletics* that "exercise and a little practice are all the preparation that children need to enter an athletic competition or play a game; serious training will do them more harm than good" reflects an outmoded point of view. In the main, however, *Britannica Junior* is an extremely accurate encyclopedia.

Objectivity. *Britannica Junior* gives fair treatment to such historically controversial figures as Aaron Burr and Genghis Khan but, though not blatantly negative, is unflattering to Richard III, Machiavelli, and Ezra Pound. Abortion and homosexuality, top-

ics omitted in the other encyclopedias in this group, are also omitted here. However, both sides of the capital punishment debate are aired. And socialism, often blithely dismissed as a stepping stone to communism, is explained in its various forms and with no evident bias. The articles *Crime and Criminology*, *Juvenile Delinquency*, *Racism*, *Drug Abuse*, and *Discrimination* are clear statements, with proper emphasis placed upon the root causes of socially dysfunctional behavior.

Women are well represented in *Britannica Junior*. For example, Golda Meir is allotted a separate article and Frances Perkins is in the Ready Reference Index. In other sets in group one, Meir is given an article and Perkins is excluded. Only in the article *Olympics* did the panel note an element of condescension. Most of the pictures accompanying it are of male athletes and such phraseology as "college athletes and grown men have to get in fine physical condition" project a bias. In the track and field sports article, only world records for men are listed and only pictures of men are used to illustrate technique. Despite such lapses, the encyclopedia takes care generally to present opposing views in an objective manner across the range of topics traditionally thought of as falling within the proper purview of young children.

Recency. The revision policy of *Britannica Junior* calls for changes in more than a fifth of its pages each year. Coverage of political figures, scientific events, and statistics is acceptably up to date. However, the panel found the selection of biographies in some fields to be dated, for example, Adelina Patti, Lillian Nordica, Walter Damrosch, Alexis Carrel, Otto Von Guericke, and Griboedov, the Russian playwright, are given short entries in the Index volume. But no information can be found about John Cage, Erik Satie, Linus Pauling, Zane Grey, or Julian Bond. In *Olympic Games*, pre-World War II theories are aired. "No one can do his best as an athlete unless he takes a reasonable amount of exercise in the open air all year around . . . (the athlete) must not eat between meals, and at meal time has only simple, wholesome food . . . after exercise he takes a warm soap shower and a rubdown, both excellent for getting knots out of the muscles." Now, to the contrary, many athletes do eat after strenuous workouts, and research evidence indicates that fluids should be replaced as soon as possible. Also, it is no longer considered necessary for every athlete to work outdoors or to have a rubdown after every workout.

Some areas of the social sciences are dated. In the discussion of the Ku Klux Klan, for example, there is little concerning its activities during the past 50 years, no mention of its involvement as a counterforce against civil rights, nothing on President Johnson's condemnation of it or the later Senate investigation. In the article *Juvenile Delinquency* the latest date cited is 1960, and new life-styles are completely ignored in the article *Family*. In summary, exclusive of sports and some current social issues, articles in *Britannica Junior* seem reasonably in pace with the times.

Quality. Some of *Britannica Junior's* best articles are those dealing with specific topics within the natural sciences and technology (e.g., *Fossil*, *Fish*, *Farming*, *Forestry*, *Space*, *Geology*, *Computer*) and concerning common household activities (e.g., *Cooking*, *Sewing*). Also, the problems of discrimination, civil rights, and drugs are thoroughly aired in various articles on those topics. The women's movement and the contemporary American family do not fare as well. There is an Index entry, *Women's Liberation*, which provides only one sentence mentioning the National Organization for Women and its founder, Betty Friedan. However, Friedan is omitted from the main body of the encyclopedia and from the Index. The discussion of the American family was disappointing to the examining panel. The articles *Family* and *Marriage* presented a portrait of solid traditional values with no discussion of contemporary problems and trends.

Other areas of particular strength surfaced in the articles on

Canada and on U.S. presidents Harry Truman and Franklin Delano Roosevelt. The personalities and accomplishments of both presidents are projected in lucid and lively portraits, while Canada receives more complete coverage than any other nation outside the U.S. The article on Canada is succeeded by *Canadian History*, *Canadian Literature*, *Canadian Mounted Police*, and *Canadian National Parks*, more than 50 pages in all. In direct contrast to this, descriptions of the arts and the biographies of some composers are sketchy or dated. For example in the *Sculpture* article, there are no Calder, Giacometti, Lipchitz, or Moore illustrations, but there is a Thorwaldsen and a reproduction of Michelangelo's *David*, shown only from the waist up. The article on the musician Shostakovich cites his First, Fifth, and Twelfth symphonies as "best known," when it is generally conceded that the Tenth may be his most artistically successful composition in this genre.

In summary, article quality is uneven. As one would expect, articles contributed recently by renowned experts in their fields tend to be stronger than those written by lesser-knowns.

Style. A smooth, easily comprehensible style makes the content of *Britannica Junior* accessible to upper elementary school children. Occasionally clarity and simplicity are achieved at the cost of losing flavor and stimulating imagery. At other times a diagram or outline would have been more effective than the language used in the article. As an example, the section in *Baseball* on rules would have been easier to digest if the rules had been listed in place of their description in prose. Generally, the use of words is effective. Unusual or difficult words are defined as they appear, and the development of ideas in articles is logical and smoothly executed. Apparently no vocabulary control or formula has been applied, but the reading level of articles remains mostly in the range of the intended audience.

Bibliographies. There are no bibliographies except in the children's literature and several of the national literature articles. This is a serious deficiency in an encyclopedia intended for school age children.

Illustrations. Black-and-white illustrations appear on practically every page. They complement the text and are usually large enough to catch the attention of the intermediate and junior high school child. Although the photographs of animals and those accompanying articles on countries are attractive, some of the line drawings (e.g., those of Aaron Burr, Jonas Salk, and Babe Ruth) do not do justice to their subjects. There are instances when colors are mentioned in captions accompanying small black-and-white photographs, as in the articles *Sumac* and *Raspberry*. These comments draw attention to the limitations of the illustration. In other articles, however, the illustrations have value as instructional aids, e.g., *Swimming* and *Baseball*. Maps in *Britannica Junior* are especially effective. They were prepared by Hammond staff cartographers, Rand McNally, and Jeppesen. The number of full-color illustrations in relation to text is relatively low in comparison with *Harver Junior World*, *Young Students Encyclopedia*, and *New Book of Knowledge*.

Physical Format. The binding is attractive and durable, with covers in navy blue and the spine in contrasting red and blue oblongs. The unit letter system (each volume contains all articles within one or more letters of the alphabet) is used in this set and in *The New Book of Knowledge*. This arrangement is preferred over split-letter volumes, which can confuse the child researcher. The paper quality is good and the type easy to read. Margins are fairly narrow, however, and the format, though functional, is uninspired.

Special attributes. Unusual features of *Britannica Junior* include its Ready Reference Index described above and the separate four-color world atlas in the final volume with its gazetteer of place-names. (Dec. 1, 1978, p. 634)

The Cadillac modern encyclopedia.

New York, Cadillac Publishing Company, Inc., 1973. xiv, 1,954p. illus. maps. 29cm. cloth \$24.95.

Authority. Articles in *The Cadillac Modern Encyclopedia* are unsigned. The editorial staff and 52 contributors do not appear to include well-known scholars or first-rank scientists. About a quarter of the contributors are associated with either New York University or City College of the City University of New York. The remainder are mostly junior faculty at other American colleges and universities.

Arrangement. *Cadillac* is arranged alphabetically. There is no index, but its cross-references were considered by the panel to be satisfactory. For example, the article *Nutrition* contains references to other articles on vitamins, proteins, carbohydrates, and so on. One minor inconvenience is the lack of a thumb index or any visible indication of where the tables, which make up the last 300 pages of the encyclopedia, commence.

Subject Coverage. The balance of subjects in *Cadillac* favors science, mathematics, law, and economics. The proportion of geographical topics is the smallest of all encyclopedias examined, only 7 percent. Generous space is given to legal, mathematical, and other miscellaneous terms. Thus *Secant Function of an Angle*; *Secant Line*; *Secession*; *Sech X*; *Secondary Parts of a Triangle*; *Second Degree Curve*; *Second Degree Equation*; *Second Derivative Test*; *Section, Plane*; *Sector of a Circle*; and *Securities and Exchange Commission* are all covered within the SEC part of the alphabet, while secretary bird, the Secret Service, Laura Secord, and the Sechura Desert, which are present in other encyclopedias, are not treated in *Cadillac*. Within the topics on mathematics, no less than eight illustrations, a table, and several series of equations are also found within a four-page span. Unique to *Cadillac* is the provision of separate articles containing précis of Supreme Court cases, legal codes, and legal phrases.

Biographical coverage focuses on artists, composers, philosophers, authors, and established scientists. Trend-setting personalities, who may be highly visible but not necessarily of enduring stature over the long term (Barry Commoner, George Crumb, Ayn Rand, Spiro Agnew, Beatles, etc.), are absent, although Lukas Foss, Douglas Moore, and Wallingford Riegger do have separate articles. Within the field of psychology, there are no articles on humanistic psychology, industrial psychology, B. F. Skinner, Abraham Maslow, Fritz Perls, or Harry F. Harlow. Although there is an anthropology article, which delineates the subdivisions of the discipline, there are no separate articles on ethology, bipedalism, or the peyote cult.

Accuracy. Within the universe of topics scanned by the panel, the *Cadillac* was in most instances solidly reliable. Mathematics, the sciences, law, and biographical subjects are handled precisely. There are a few places, however, where statements are not borne out by the current consensus of experts. For example, *Intelligence Test* contains a paragraph referring to the stability of IQs. Research has shown that IQs vary in excess of 15 points in 50 percent of children as they advance from age 6 to age 18. At lower ages, the instability is even more pronounced. The Dostoevsky article is too short and is also substantially incorrect. In its chronology, for example, it erroneously places the writer's prison experience before the publication of his first work *Poor Folk* in 1846.

Objectivity. *Cadillac* often avoids controversial topics or handles them in a brief, objective manner. The article on abortion is somewhat more shallow than those on communism, Ezra Pound, and Emma Goldman. Some controversial figures, such as Malcolm X and suffragists Blackwell and Pankhurst, are not mentioned. In the biographies that do appear, there is no tendency to editorialize.

Recency. The *Cadillac* is the newest encyclopedia in group three. Its first edition was published in 1973. Possibly because of this and the lack of residual articles inherited from past editions, it is more current than the other sets in the humanities. Also, subjects such as space exploration, holography, anthropology, RNA, DNA, serial music, the Managua earthquake,

and the 1973 Supreme Court decisions on abortion are integrated and do not have that grafted-on look one finds in other sets. It is surprising, therefore, that there are lapses, as in the article *Intelligence Quotient* previously mentioned. Also, the Pakistan bibliography contains only one entry dated 1964. With all the events involving India, Pakistan, and Bangladesh in the early 1970s, a more recent title is necessary. Other areas of the encyclopedia will soon need updating, but the publishers provide no indication of when a new edition will be forthcoming.

Quality. Meteorology, business and economics, law, and mathematics are adequately covered in *Cadillac*. The article *Atmosphere* is comprehensive, readily understandable, and enhanced by an excellent chart. In economics there are separate articles on gross national product, banking, Bretton Woods, Keynes, Adam Smith, and J. B. Say. Mathematics, especially common functions, curves, formulae, and various aspects of topology, calculus, and solid geometry, are clearly and concisely presented.

The biographies are less successful because of their extreme brevity—usually under 100 words. Those of mathematicians Bernhard Riemann and Leonhard Euler, for example, omit essential facts about their contributions to mathematical theory. In the Euler articles, there is no discussion of the two formulae upon which his reputation is based. The Freud and Erikson articles are too compressed; nor can Piaget be properly described in 75 words. Piaget's recent research in the area of epistemology is missing from the text as is his description of the thought processes of adolescents. Similar limitations occur in *Abortion*, *Gestalt Psychology*, *Inquisition*, *Edmund Burke*, and *Nutrition*.

Style. The style of *Cadillac* is clean, straightforward, and comprehensible to the high school student and adult.

Bibliographies. *Cadillac*'s bibliographies are short, sporadic, and often (as in the Pakistan article previously mentioned) dated. Within group three, *Cadillac* includes more bibliographies than *Lincoln* but far fewer than *New Columbia*. It is most closely related to *Volume Library* in quantity and adequacy of listings. Usually only one item is cited. For larger articles, three or four may be appended. For *Socialism* and *Communism*, as well as the Brahms article, there are three each. For *Automobile*, *Tree*, and *Brain*, there are none. *Avicenna* and *Avesta* have single references. From these examples the pattern appears to be haphazard.

Illustrations. Illustrative matter in *Cadillac* is strictly utilitarian. Drawings and schematics in black and white, along with about 300 maps, make up the 1,100 or so illustrations in the encyclopedia. The maps are small, lack detail, and are of only marginal usefulness. The eleven NASA space photographs, a color wheel, and maps appended to the end of the volume are not mentioned within the text and add minimal value to the work. Generally, the placement of illustrations is directly adjacent to related text. Immediately following the entry on Voltaire, however, there is a schematic of a voltmeter, although the article on that subject appears on the next page. Also, the Boolean algebra charts lack vertical lines. Most of the mathematical illustrations are clear and coordinate well with written descriptions.

Physical Format. *Cadillac* is bound in navy blue and gray with gold stamping on the front cover and spine. The encyclopedia lies flat when open, although inner margins are too narrow. Its paper is lightweight but opaque, providing good contrast with print and illustrations.

Unique Attributes. Unusual features of *Cadillac* are its thorough discussion and illustration of mathematical formulae, forms, terms, and concepts. Another special asset, which may not be used to advantage because of its awkward placement at the back of the volume, is a section of hard-to-find data and tables containing information. There are 19 for the humanities, 81 for law, political science, and history, and 22 for mathematics. There are 29 codes, constitutions, charters, etc., ranging from excerpts of the Code of Hammurabi to the United Nations

Charter. One can also find the 47 largest islands, integral tables, a perpetual calendar, chemical tests, the nutritive value of 188 foods, and a list of pen names and pseudonyms. Some of this is fun to scan. But much of it is more fully and currently represented in other standard sources. (Jan. 1, 1979, p. 767)

Chambers's encyclopaedia.

15v. London, International Learning Systems Corporation, Ltd., 1966, reprinted with corrections 1973. illus. maps. diagrs. charts. 28cm. fabrikoid.(o.p.)

Authority. Approximately 3,000 contributors assisted in the writing of material for *Chambers's Encyclopaedia*. All important articles are initialed by the contributors who are identified in the preliminary pages of the appropriate volume. A high proportion of these individuals, particularly in the humanities and social sciences, have international reputations. In the scientific and technological fields, many of the contributors are associated either with British academe or hold prominent positions with research or governmental bodies based in the United Kingdom. The quality of intellectual input is obvious in the following examples: Richard Barrow, Sydney Chapman, and Sir Peter Medawar contributed the articles *Brownian Movement*, *Terrestrial and Solar Magnetism*, and *Biophysics and Growth*, respectively; A. G. N. Flew prepared the entries on Hobbes and Hume; and Sir Herbert Read wrote the article *Aesthetics*. Other contributors were Walt Rostow (*Trade Cycle*), Friedrich Hayek (*Ricardo, David, and Economics*), E. E. Evans-Pritchard (*Azande and Berbers*), V. Gordon Childe (*Civilization*), J. B. Rhine (*Clairvoyance*), Walter Whately Carington (*Psychical Research*), Colin Cherry (*Information Theory*), Irving Copi (*Logic*), Allardyce Nicoll (*Comedy and Drama*), and Phyllis Hartnoll (*Farce*). Disadvantageous to *Chambers's* is the presence of many deceased contributors as well as individuals who articulate continental/British rather than North American points of view. Typical unsigned articles of dictionary definition-length are *Job's Tears*, *Mahabaleshwar*, *Lilac*, *Rainaldi*, *Rhubarb*, *Prelate*, *Neuplia*, *Midas*, and *Pig-Sticking*.

Arrangement. *Chambers's* is arranged alphabetically. See references within articles and *see also*s at the end of articles provide access to the 28,000 broad entries included in the revised edition. The references are provided only selectively but are adequate because of the presence of a 225,000-term Index in volume 15. In this volume is also a "Classified List of Articles" displayed under 30 subject headings (e.g., agriculture, law, zoology, sports). The Index and list insure modestly successful approaches to the contents. The panel noted that the index references showed superior familiarity with subjects. Under Ravel, for example, are subheads for chamber music and piano works. However, in some instances subject matter was not easy to retrieve, even in British topics. For War of Roses, for example, the searcher must scan several volumes in order to pull together comprehensive material on the kings mentioned in the initial article, which provides only underlying causes, battles, and dates and does not provide a thorough view of relevant persons and events. Finding devices within *Chambers's* are more effective than those provided by the *Encyclopaedia Britannica*, but access to content is better expedited in the American sets in group five.

Subject Coverage. *Chambers's* contains a mixture of broad and specific subject coverages. Small localities, many of them British (e.g., Kirkby-in-Ashfield and Kirkcudbrightshire), receive compact descriptions usually running under 200 words. Of course, the major metropolitan centers get much more attention. *London* contains 24 pages, *New York* has five, and *Cardiff* and *Chicago* both run slightly more than a page each.

Comparing biographical representation, one finds a similar pattern of British predominance. Among sets in group five, only *Chambers's* provided brief biographies for John Clerk of Eldin and Agnes Mary Clerke. There are also entries for Sir Dugald

Clerk and the job classification, clerk. Historical figures of international importance receive more attention than persons familiar to Americans. Joseph Kirkland (novelist), Alan Kirk (U.S. naval officer), and Samuel Kirland (colonial period Congregational minister) appear in *Americana* and *Britannica* but not in *Chambers's*. Comenius receives more space than John Dewey.

The larger articles, those exceeding 2,000 words, concentrate on the areas of history, national coverages, social sciences, arts, and the theoretical aspects of the sciences. The character and tone of the set is reminiscent of earlier editions of the *Britannica*. The emphasis is almost directly inverse to that of the *Americana* in that it places a heavy stress upon the historical and theoretical bases of disciplines rather than the practical. Thus *Chinese History* is 34 pages long, while *China* is 26 pages. *Mental Disorder* (29 pages) emphasizes the history of psychoanalysis, and the 43-page article on chemistry is one-quarter historical. There are extensive articles on mercantile law, Roman law, canon law, Jewish law, and legal theory. *Japanese History* and *Japan* receive separate, equally extensive articles. *Commonwealth*; *Chivalry*, *Orders of*; and *Coal* are more substantial than *Mexico*, *History of Music*, and *Aeronautics*, again indicative of British perspectives. The article *Industrial Revolution*, though first-rate within its limits, deals solely with the English experience. Shorthand and spelling are looked at historically, and practical applications are not mentioned. *Typewriter*, again historical in coverage, is unique in the group five articles on the subject, because an explanation of the keyboard letter arrangement is provided. Of the topics and biographies sought by the panel, fewer were found in *Chambers's* than in the other group five sets.

Accuracy. Most of the errors in *Chambers's* stem from datedness of information. For example, in *Adult Education* there is the observation that from 1950 on, the Ford Foundation stimulated discussion and directed needs for continuing education. There is no indication that the aid from the foundation actually was discontinued in the late 1950s. Similarly the figures for the consumption article are for the 1950s or earlier. *Criminology* contains the unjustifiable assumption that "criminals . . . are heavily concentrated in the lower socio-economic class—the unskilled workers . . ." Such a conclusion is not surprising because the bibliography is of mostly pre-1963 titles. In recent years, the author's contention has been challenged on the basis of personal reports of delinquency and adult criminal behavior. There has recently been rejection of any definition of crime and criminals that *ipso facto* places the locus of crime in the lower class. Other misinterpretations occur in articles that discuss the American electoral college and governmental entities and do not adequately distinguish between ours and the British parliamentary form of government. Newton's Laws of Motion are also misdefined. One reads that "exertion is necessary for the movement of bodies from one place to another," but this can not be so, since it contradicts the first law of motion. Many other interpretations of conditions in foreign countries, economics, psychology, and fast-moving technologies are incomplete or inaccurate because they are more than a decade out of date.

Objectivity. *Chambers's* editors allow considerable leeway for the expression of their contributors' opinions. Within the field of psychology several examples occur. The article *Psychology* begins with the statement that this discipline finds its place among the biological sciences. The emphasis throughout is on organism in the environment rather than upon man in the universe. Also, historical roots of psychology, rather than recent developments, are highlighted. Hullian theory is held as the model for the field, and imprinting, cognition, and volition are dismissed as disproven or irrelevant concepts. At the end of a paragraph on instinct in man, the statement appears that "agreement is unlikely to be reached and it is not of great consequence to psychology." Carl Jung's work is mentioned but

denigrated here and elsewhere in the set as not resting on secure evidence or being open to verification by the methods of empirical science. The main entry on Jung is brief, dated, and lacks a bibliography. No one reading it would bother to pursue further information on him. Finally, homosexuality is subsumed under the heading "Abnormal Sexuality" within a substantial article on mental disorder.

Examples of bias also occur in other subject areas. The article *Co-education* points out the advantage of separating the sexes because "it is easier to maintain discipline and to cater properly for diverging interests, e.g., housewifery, child-care, engineering, and gymnastics when only one sex has to be taken into account." Another slanted opinion is offered by the contributor of the article *Continental Drift*. Written before the mid-1960s symposia on the topic, the discussion adopts almost a mocking tone and contains phrases such as "assumed," "it is claimed," "were supposed to have," etc. No awareness of recent discoveries or events, which tend to prove the validity of the theory (e.g., paleomagnetic dating, study of the midoceanic ridge, supportive distribution of fossils) is indicated. In *Kashmir*, the language is unnecessarily harsh with references to the "horrible butchery of Moslems" and "connivance of local . . . officials." The writer fails to relate the claims of either India or Pakistan to the disputed area; nor does he include an explanation of why the status of Kashmir was not determined at the time of independence and partitioning of the subcontinent. Other articles also display class elitism, pomposity, and unwarranted generalizations not acceptable to an American audience.

Recency. The edition examined for this review was published in 1966 and reprinted with corrections in 1973. Therefore, the content is unavoidably more dated than that contained in the other more recently revised sets. Although history and the timeless aspects of human accomplishment take up a large share of space in *Chambers's*, national, biographical, and technical coverages not immune to change comprise more than half the total material. In these areas the set is behind in both its aggregation of facts and in interpretation. Lasers, radio-astronomy, space exploration, economics, education, the arts, literature, and even historical biography have statements that have been made incomplete, irrational, or false by the passage of time. For example, the article *Musical Comedy* ends with *Oliver* (1960) and only one American, Jerome Kern, is connected with the form, a peculiar omission since most critics have claimed that musical comedy is the only truly American innovation in world theater. The encyclopedia's interpretations of Stravinsky, Ezra Pound, Thomas Jefferson, the institution of slavery, the causes of crime, and political status of many countries have also been made invalid because of the press of events and modified research findings. Talmudic law, classical studies, philosophy—these are the only kinds of subjects in *Chambers's* that can satisfy the contemporary reader.

Quality. The caliber of *Chambers's* articles is predictably best in those areas associated with the British heritage. The British Civil War (rebellion of the parliamentarians against Charles I) is better described than the U.S. Civil War. Heraldry receives four times the space devoted to economics. Invention and isolationism are not given separate articles, and depression is a discussion not of psychology but of the meteorological phenomenon. *Iron Work* and *Embroidery* are substantial and well illustrated, the latter ending with a glossary of terms. Law is generously represented in a long succession of separate articles including *Canon Law*, *Constitutional Law*, *Roman Law*, *Mohammedan Law*, *Jewish Law*, *Chinese Law*, *Hindu Law*, and a 40-page section on *International Law*. This article, contributed by the authority Georg Schwarzenberger, covers historical origins, the international personality, state jurisdiction, objects of international law (including outer space), international transactions, and laws of war and neutrality. As noted earlier, English place-names are also thoroughly represented. There is even an entry for Isca

Dumnoiorum, the Exeter of Roman Britain, as well as for the modern city. Nations now or formerly associated with the Commonwealth and the Far East are covered in more depth than is usually the case in American encyclopedias. *Egyptian History* is larger than *History of Europe*, for example, while China and India enjoy extensive coverage of their anthropology, archaeology, geology, and geography.

Biographies of persons in the arts, religion, letters, and philosophy are more satisfactory than those for scientists. Current and American biography is weak. Ravel, Debussy, Cicero, Andrew Marvell, Isidore of Seville, and William Morris are excellently covered. There is a tendency throughout *Chambers's* to "humanize" subjects by inserting such minutiae as the Mozarts' limitation of their newborn infants' diets to boiled water or Ezra Pound's billiard-cloth trousers. On the other hand, the Dostoevsky article is the least detailed of those found in group five. Its main virtue is its references to Pushkin, Balzac, Schiller, and Shakespeare as influences on Dostoevsky's literary development. There is considerably less elaboration on individual novels. In contrast to the *Americana*, where editing has smoothed out the firmly held views of the contributor (David Magarshack), the *Chambers's* article permits more intrusions of the commentator's viewpoint. Americans often are not given balanced or current interpretations. The Edison article places too much stress upon the Edison Effect and too little upon the electric lamp. The Thomas Jefferson article lacks sufficient discussion of his ideas on democracy and government. Francis Wayland Parker and Horace Mann receive brief sketches.

In science and technology, the approach to subjects is rigorous and academic, with facts marshalled in textbook fashion. The article *Chemistry* is similar to a college freshman year syllabus with its sequential delineation of the history of science, physical chemistry, organic chemistry, and analysis. *Internal Combustion Engine* is highly technical, filled with mathematics and formulae for the determination of the air-standard efficiency of the composite working cycle, the output of a gas generator, jet thrust in relation to turbine temperature, and so on. There is a single plate illustrating three gas turbine aero-engines. The organization of the article is logical but not immediately clear. In contrast, the *Americana's* article offers an understandable four-part treatment that moves through summaries of history, types of engines, working cycles, and efficiency in a sequence that more effectively leads from the simple to the complex. *Americana* also provides color illustrations of the three types of engines and a more current, cosmopolitan bibliography. Wankel engine and air pollution problems are mentioned in *Americana* but not in *Chambers's*. The article *Telescope* is stale with no data on radio astronomy and nothing about the placement of instruments on the moon's surface for observation.

Articles in the fine arts and sports are uneven in coverage. The relatively long article *Cinema* and *Cinematography* commit an inordinate amount of space to Charlie Chaplin and Mack Sennett comedies in proportion to the works of later years, providing only side glimpses of the directors of New Wave films and no coverage whatever of the American western. The formalized morality tales *Stagecoach*, *Shane*, and *High Noon* are not mentioned, and no horror films are included with the exception of *The Cabinet of Dr. Caligari*, the German expressionistic masterpiece. British and Canadian filmmaking overshadows all other activities. Sports, of course, are presented from the English perspective on the subject. English football and cricket are covered in much more detail than American football and baseball. The information on the game of bowls is excellent, but the only information on bowling is one sentence incorporated in an article on skittles.

In brief, the panel's impression is that classical literature, English place-names, history through the nineteenth century, music and art biography, philosophy, and law are strong in *Cham-*

bers's. The sciences, modern issues and events, career education, and automotive mechanics are handled in a manner incompatible with the needs and expectations of the average adult American. For those concerned with the first group of subjects, this encyclopedia would serve as a valuable source of information.

Style. The writing in *Chambers's* is erudite, fully ripened, and rigorous. It is directed to the American who enjoys reading the *Scientific American* or the *New York Review of Books* rather than *Reader's Digest* and *Cosmopolitan*. Appreciation of the science articles requires a command of mathematics and basic principles held by persons with a post-high school education, since much of the English is not straightforward. For example, in the history of radar, one reads that "when hostilities were suspended, the radar workers carried their new-found versatility and audacities in the field of electro-magnetic-wave and electronic devices, and their expertise in pulse techniques into such fields as atomic and nuclear energy research, data processing systems, the instrumentation of particle physics, the improvement and maintenance of standards of time, the whole field of solid-state devices in electrophysics and in electronic engineering, spectroscopy over an expanded range of frequencies and microscopy reaching down to the individual molecules." Adding to the difficulties for the reader are British spellings, such as "centre," "whilst," "connexion," and "aeroplane." *Chambers's* claim that its audience is the "educated layman who has some general grounding in a variety of subjects from which he can proceed to more exact and detailed information in specific fields" is justified only if "educated layman" is taken to mean an American reader who has had an undergraduate education.

Bibliographies. Listings of titles are appended to almost all of the larger articles in *Chambers's*. Some of these bibliographies are arranged in classified groupings. For example, following the article *Psychology* are several hundred titles under 16 headings including *Information Theory, Learning, Emotion, Thought and Language, and Consciousness and Sleep*. Foreign-language titles are frequently cited and only author/title/date information is given. Many of the items are out of print or obscure. The article *Mercator* includes no English titles, and the physical sciences in general are old. *Money* does not cite the works that contain the most authoritative thinking on the subject. The article on Thomas Edison does not include the definitive biography of Josephson, and *Slavery* omits the classic work *The Peculiar Institution* by K. M. Stampp. *Typewriter* suggests mostly books published in the 1920s. Articles on Henry the Navigator, Cicero, Machiavelli, castles, classical world figures in general, and philosophy fare much better in listing works of interest to the serious scholar. Although bibliographic entries have been selected with fastidious care, their datedness, uncompromisingly scholarly quality, and limited availability make them of limited utility for most adult readers in this country.

Illustrations. *Chambers's* uses few graphics. Articles on dahlias, chrysanthemums, roses, and Raphael incorporate black-and-white photographs; the Renoir entry has nothing but text. Full-color illustrations, usually four or five per volume, are reserved for painters (e.g., Constable and Rembrandt), examples of applied art (e.g., illumination of manuscripts, heraldry, embroidery, and Chinese lacquer), and subjects such as lizards and mollusca. *Bayeux Tapestry* has no color illustrations. The few photographs for *Ballet* are poor, and the diagrams and drawings accompanying *Thermodynamics* and *Internal Combustion Engine* are cluttered, cramped, and not very legible because of the extremely small print. There are few portraits of biographees, and the photographs of various industrial processes, e.g., the manufacture of jute yarns, tend to be muddy and dark. There are two plates of black-and-white photographs of dogs that confuse more than they inform, since the airedale and bulldog appear to be larger than the Great Dane. The illustrations, in

brief, are leaden rather than lively and are too meager in quantity and quality to satisfy the common user of encyclopedias.

There is an atlas preceding the Index in the final volume of the set. Produced by John Bartholomew & Sons, the 114 maps show physical and political features and vary in scale from 1:2M to 1:10M. The larger scale maps are not easily readable because of the compression of place-names, roads, and geographical features. The black-and-white maps dispersed throughout the set are more effective because they show such characteristics as land use, climate, rainfall, migration, agriculture, and population density in direct relation to the text.

Physical Format. The binding of *Chambers's* is supple enough to permit it to lie open easily but not strong enough to hold up under strenuous use. Letters on the spine are gold against black. The paper is translucent, and the type is attractive but small. Running heads and page numbers at the top margin expedite finding of needed articles. The layout is elegant but stodgy.

Special Attributes. Trade, production, land use, and population statistics in tabular form are included in many of the articles on countries. Some of these figures encompass sufficient time (a decade or more) so that they disclose important trends; thus, one can see, for example, the shift in trade balance between the United States and Japan during the years 1967-69.

The "Classified List of Articles" in the final volume is a handy supplementary key to subject coverages. Art, history, philosophy, religion, and zoology subject listings are particularly useful because of *Chambers's* relative strength in these areas.

(Feb. 1, 1979, p. 882)

Collier's encyclopedia.

24v. New York, Macmillan Educational Corporation, 1975-. Illus. maps. plates. tables. 28cm. buckram, to homes, \$529.50 plus delivery; to schools and libraries, \$425 plus shipping; pre-pub. \$372 plus shipping; special prices available for multiple purchases.

Authority. Over 90 percent of the articles examined in *Collier's Encyclopedia* are signed. More than 27 percent of the 4,470 contributors, many of whom are well known internationally, were located in major biographical directories. Carlos Baker, Isaac Asimov, Henry Steele Commager, Irving M. Copi, Maxwell Geismar, Jean Gottmann, Sidney Hook, Abram Kardiner, Andre Maurois, Sir Herbert Read, B. F. Skinner, Barbara Tuchman, and Rene Wellek exemplify the variety and power of intellectual credentials among them. *Collier's* is a mid-twentieth-century creation, its first edition appearing 1949-51.

To the Macmillan Educational Corporation's credit are several other encyclopedic sets of major importance. Besides the *Merit Students Encyclopedia*, the publisher is also responsible for the prestigious *International Encyclopedia of the Social Sciences*, *Encyclopedia of Philosophy*, and *Great Soviet Encyclopedia* translation, still in progress. The good breeding found in this family of reference works is clearly evident in *Collier's*.

Arrangement. Alphabetization of the articles in *Collier's* is letter-by-letter. Within the sequence of article headings there are cross-references from alternate headings, such as *Contract Bridge to Bridge* and *Pole Vaulting to Track and Field Sports*, where articles may be found. References to related coverage, however, are rarely provided within or at the end of articles. To compensate for the absence of this kind of cross-reference, there is an exhaustive and well-designed Index in the final volume. The Index contains specific references to topics within general articles, illustrations, and the item numbers of relevant works cited in the bibliography section of volume 24.

The structure of the longer articles is particularly helpful in *Collier's*. In *Theater*, for example, a box on the first page summarizes the organization of subject matter by presenting, in brief essay form, headings where specific theaters, drama forms, and national literary dramas may be located. The boxed information concludes with related topic references, such as *Motion*.

Pictures or Television. Other broad articles have in common a clearly worked out pattern and numerous leads to related material. As a case in point, *Musical Comedy* not only is covered extensively in its own article but also ends with four pages of brief biographies of persons (living and dead) in the field with references to separate articles on the more famous (e.g., George Gershwin, Rudolph Friml). Imaginative editing has also been applied to drama, which is handled in the separate articles *History of Comedy* and *History of Tragedy*. In each, the influences of one author upon another are traced through the centuries. Even though the major dramatists are well covered in specific articles, they are nevertheless cited in these extensive essays, which provide a more panoramic view than that made available in the other group five sets. In summary, structure, arrangement, cross-references, and indexing in *Collier's* provide valuable assistance to the reader.

Subject Coverage. Considerable breadth of treatment and selectivity are characteristic of *Collier's*. Articles on major personalities and those on general subjects like music and drama tend to be longer than those in the other sets in this group, with the exception of those in the Macropaedia section of the *Encyclopaedia Britannica*. Geographical coverages are particularly attractive and account for a higher percentage of space in *Collier's* than in the other group five sets. Compared with *Americana* and *Britannica*, *Collier's* has less dense coverage overall; it contains about half as many separate articles as *Americana* and one-quarter as many as *Britannica*. For example, terms such as *mascon*, *masochism*, and *program music*; titles such as Plato's *Republic* and Aristotle's *Poetics*; and other topics such as projection (map), profit sharing, and prayer rug are not given separate articles. They appear instead as elements within longer articles or are omitted. *Mascon*, for example, is hidden under *Space Exploration*, *Geodesy*, and *Moon*.

With regard to the balance of subjects, *Collier's* appears to be strongest in the arts and humanities. Coverage of the social sciences is also excellent as is that of botany. However, the sciences in general are less concentrated and scholarly. Plutonium receives more extensive treatment in other adult encyclopedias as do higher mathematics and applied sciences. Subtopics in these areas (e.g., pneumatic tools and pneumatic tubes) do not appear at all, while the Pleiade, a group of seven French Renaissance poets, is accorded thorough discussion by a noted expert on the period. The selectivity of topics lends the encyclopedia an open quality, which makes it a pleasing place for a browser's picnic. Seekers for small bits of data are obviously not as well served, since they must depend on the Index in order to locate all aspects of subjects not given separate articles.

Collier's has carefully planned its allocation of space so that topics of interest to American students and the nonspecialist are given the most weight. Money and commercial banks receive more attention in the field of economics, for example, than monetary theory, Horace Mann more than Comenius, and so on.

Accuracy. Comprehensive examination of *Collier's* by the panel revealed extraordinarily few factual errors and several instances where *Collier's* was the only encyclopedia in its group with correct data. Criminology, music, art, cinema and theater, economics and banking, theoretical physics, mathematics, and contemporary politics were fields in which the panel discerned no unreliable data. However the factual content in rare instances is deemphasized in favor of elements bound to appeal to the reader's sense of the dramatic. In *Mary, Queen of Scots*, for example, it is stated that Mary was without question implicated in the murder of Lord Darnley, despite the general consensus among historians that insufficient evidence exists to substantiate this charge. A few other inaccuracies occur only because of datedness of treatments. In *Business Education*, there is the observation under "high schools" that "about half of all people enrolled in business education elect a course in

typing," when for the past decade the proportion of students, even in general programs, has been rising above that percentage. Similar lapses occur in some of the science articles. Nevertheless, in general the level of accuracy in *Collier's* is unexcelled in group five.

Objectivity. Bias is rare in *Collier's*. While other adult encyclopedias almost always refer to the propaganda inherent in Communist countries' adult education programs, *Collier's* refrains from such value judgments and states that the movement was begun in Communist countries to fight illiteracy. A good brief history and a description of current trends in the USSR are included without any subjective asides. Equally objective coverage is given to controversy-plagued nations such as Bangladesh, Republic of South Africa, and Chile. Only in its treatment of Eastern history and culture is it relatively lax. Historical figures such as Richard III receive an open hearing with sufficient explanations of their actions. *Ezra Pound*, *Communism*, *Homosexuality*, and other disputable topics are treated fairly. Among encyclopedias in group five, *Collier's* is most consistent in its objectivity of reporting.

Recency. Although it is continuously revised, *Collier's* has areas that have slipped into obsolescence. *American Jazz* receives excellent historical coverage but lacks post-World War II material. Penderecki is only peripherally mentioned, and composers Barber, Hindemith, and Britten are represented by photographs taken 30 or more years ago. *Slavery* does not reflect important shifts in interpretation evolved during the past two decades and pays insufficient attention to such matters as the legal status of slaves and the profits realized from the institution. *Industrial Revolution* is a dated article with an almost exclusively European emphasis. *Criminology* omits any reference to the symbolic-interactionist perspective, since it ends in the 1950s. Similarly Kashmir's political status is discussed without any reference to the Tashkent Declaration; post-1950 developments are given short shrift. *Typewriters* is well placed in historical perspective but the latest model mentioned was manufactured in 1968, and the newer self-correcting machines are not considered. *Telescopes* is a first-rate article, the best in group five, but it is remiss in not including lunar and radio astronomy. On the other hand, economics, law, statistics, adult education, international politics, and discussions of foreign countries are current.

Quality. The liveliness, lucidity, design, and content of articles in *Collier's* are almost without exception at an exemplary level. *Collier's* appears to be compatible with the curricula of secondary schools and colleges. The major aspects of the physical, life, and earth sciences, as well as the humanities, are handled thoroughly without moving into unfathomable depth. Only rarely (and less often than in the other group five sets, with the exception of *Americana*) are scientific concepts slighted in an effort to achieve a pleasing, easily understood style.

A small number of persons in the social sciences and arts receive rather shallow treatment. Comenius's biography omits his important *Orbis sensualium pictus*. Stravinsky and Virgil Thomson are not covered in sufficient depth in relation to their importance in music. Other articles are long on facts but short on interpretive insight. The article on William Morris deals mostly with his literary output and contains insufficient commentary on his craftsmanship, printing, and general cultural influence.

The large-scale treatments of subjects, on the other hand, are uniformly successful. Examination of an array of subjects including *Criminology*, *John Dewey*, *Psychology*, *Bowling*, *Jung*, *Geography*, *Industrial Revolution*, *Roman Catholic Church*, *Judaism*, *Henry the Eighth*, *Typewriter*, *Telescope*, *Economics*, *Van Gogh*, *Dostoyevsky*, *Ballet*, *Troy*, *Theater*, *Money*, and *Conservation* revealed consistently exemplary coverage. Occasionally, however, the sheer wealth of detail incorporated in an article may perplex the reader.

Bowling reveals some of the characteristics that differentiate

Collier's from other sets. Although *Britannica* contains the same historical materials, *Collier's* has less abundant detail. The writer instead stresses human interest factors by noting, for example, that "if a group of women did play the game, the proprietor would hang a curtain to hide them from the view of the male customers." Equal attention is given to the history and to the mechanics of the game. *Ballet* is strong in its exposition of the contemporary state of the art. Synopses of several classic ballets appear, along with biographies of dancers that note both minor events in their lives and provide excellent critical evaluation of their artistic achievements. In *Theater*, the first 12 pages of the article, which treat the development of architecture and stage machinery, are enhanced by clear, black-and-white sketches and photographs. Similarly, *Telescopes* is smoothly balanced, with both the history and the technical aspects of the instruments clearly defined. Other articles are of equally high caliber.

Style. There are a few instances of unclear or overly complicated language in *Collier's*. In *Bangladesh*, the terms "Awami," "Aman," and "Aus" appear without explanation, and the writer describing Carl Jung resorts to rather lofty, technical phraseology. Similarly, *Laser* includes terms insufficiently clarified for the reader, such as "calimated," "ground clutter," and "gegacycle." The bulk of the writing, however, is exceptionally clear, digestible, and well-gauged to the capability of the general reader, albeit at times too informal and anecdotal to satisfy the scholar-specialist. The panel found *Collier's* the most accessible of the adult encyclopedias, equally comfortable for secondary school and adult readers.

Bibliographies. Bibliographies in *Collier's* are classified within 117 subject groupings and approachable only through the Index. They appear in a single volume, (number 24) and are represented under very general subject headings. The bibliographies are more useful for general overviews rather than for specific topics. As a case in point, geography titles dealing with regions, travels, and branches of the discipline are easy to find, but those on geographers and specific topics (e.g., continental drift, map projections) could not be located. It was also surprising to find no listings for jazz or Dostoevsky.

The absence of bibliographic entries for biographical subjects was noted generally by the panel. For example, the Lumières, Edison, Griffith, Chaplin, Disney, Ford, Asquith, Bergman, Eisenstein, Garbo, Fellini, and Kurosawa all lack bibliographic citations. For many of these people connected with creative aspects of film, a conscientious student would require a bibliography to arrive at a fair appraisal of their impact on the medium. The panel thought that *Collier's* would be more useful if articles contained references to the main bibliography by numbered entry whenever appropriate titles were cited.

Despite their high quality, many listings were considerably out of date. The mathematics listing contains mainly decade-old titles; under sports and games are major reference works from the mid-1960s. The two career guidance titles in the field of social work were published in 1962 and 1964 respectively, and the single title on the history of the phonograph has a 1943 imprint. Most of the 11,500 titles listed, however, were representative and current, characterized by easy availability, and appeal to the average reader.

Illustrations. Among group five sets, only *Britannica* exceeds *Collier's* in the number of illustrations relative to the text. *Collier's* has a variety of effective graphics, photographs, diagrams, and drawings. Color illustrations are not dispersed through the encyclopedia but are limited to four or five full-page colorplates in each volume. In the M letter of the alphabet these are provided for *Mushrooms*, *Moths*, *Military Uniforms*, *Mammals*, and *Marine Life*. The article on Van Gogh and those on other artists suffer from a lack of color reproductions of their work. In the case of Van Gogh, the editor compensated in part by permitting sufficient magnification so that the brush strokes

show, even in the black-and-white renderings. In *Ballet* photographs are oversized and not well-placed. For example, four photographs consume one-half the space on two pages and are followed by two more pages of uninterrupted text. The matte finish and overly dark reproductions subtract further from the effectiveness of the graphics. Photographs of human subjects are generally adequate but not as consistently good as the other illustrations. The illustration of Gerhardus Mercator is too small and that of Henry the Navigator is again too dark. On the other hand, formal and expressive portraits are provided for John Dewey, John Maynard Keynes, and many other figures. The illustrations created by *Collier's* staff are very good indeed. Ballet positions, meteorological phenomena (wind currents, atmosphere, cloud formation), map projections, continental drift, theater architecture and machinery, paper manufacture, pictographs and idiograms, career opportunities, and lens elements of the telescope are all effectively shown. A few transparent overlays for subjects like human anatomy have also been set in for possible use in connection with school curricula.

A mixture of Rand McNally and locally originated maps is integrated with the text. Black-and-white, specially produced maps enrich much of the historical coverage. The Rand McNally maps are always accompanied by gazetteers.

All in all, graphics are generously proportioned, clear, logically placed, and relevant.

Physical Format. The binding is durable, flexible, and clearly lettered and numbered in gold on a black and red background. The paper is matte, and its density and tone are such that black-and-white, half-tone, and line drawing illustrations appear to maximum advantage. The type is large, contrast excellent, and layout pleasing to the eye. The inner margins are narrow and illustrations bleed into the gutter. Use of space is efficient. The open page has more aesthetic appeal than that found in the other group five sets.

Special Attributes. Like *Funk & Wagnall's* the bibliographies are not integrated with the text but sequestered in a separate volume. (Feb. 1, 1979, p. 884)

Compton's encyclopedia and fact-index.

26v. Chicago, F. E. Compton Company, Division of Encyclopaedia Britannica, Inc., 1975—. illus. maps. tables. 26cm. buckram \$279; to schools and libraries only.

Authority. *Compton's Encyclopedia* lists approximately 400 contributors. Among them are notable librarians (e.g., Lillian Bradshaw, Leon Carnovsky, Emerson Greenaway) as well as prominent persons from other fields (e.g., Vine Deloria, Jr., Elizabeth Hurlock, Wallace Stegner). However, more than 11 percent of the contributors listed are deceased, and this adversely affects the set's currency, because some of these individuals are associated with fast-moving subject areas, such as aerospace science, religion, calculating machines, and agricultural chemistry. About 1 percent of the articles are signed.

Arrangement. *Compton's* arrangement is more elaborate than that found in the other sets in group two. The two-way reference system—cross-referencing from text to Index as well as the other way around—allows for quick access to the set's contents. The Fact-Index, however, is not entirely successful.

Because of its inclusion of pictures and capsule information, the Fact-Index is neither a pure index nor an ideal quick reference tool. Many accounts given within the Fact-Index are so brief that essential aspects of subjects are sacrificed. Quite often, Index references lead to meager information that barely justifies the referral. For example, a reader seeking information on Dewitt Clinton is referred to a page in the C volume for information both on him and on the Erie Canal. There is no mention of Clinton on the page, however, and only one sentence on the canal, recording the fact that it opened. The Fact-Index itself contains the only information about Clinton: nine lines. In spite of this difficulty, the perspectives and particulars

of topics and biographies are more successfully drawn together within *Compton's* than in other encyclopedias.

Subject Coverage. The balance of topical representation is appropriate for the child in school. American presidents, states, animals, nature study, and emergent subjects that have no distasteful undertones are included. Unsavory topics are avoided. Thus the electoral college, archaeology, peace movements, and the Boy Scouts of America are given clear and current treatment. But abortion and capital punishment receive only peripheral attention. The choice of persons to receive full biographies seems eccentric. For example, Susan B. Anthony is given full treatment, while Elizabeth Stanton is covered by a brief entry in the Fact-Index.

Accuracy. A generally high standard of accuracy is maintained by *Compton's*. For example, the discussion of eutrophication is readable but not oversimplified. The panel found few factual errors in the scientific, historical, and geographical articles they read; dates, statistics, chronological sequences, and events were correctly represented. Like other sets, however, the panel noticed a tendency to resort to *ad hominem* statements, accepting them as proven without further effort at authentication. For example, although recent scholars have confirmed that the birthdate of Major John André is May 2, 1750, *Compton's* cites it as 1751. Both *Dictionary of National Biography* and *Compton's* give the later date incorrectly.

A more serious error occurs in *Microfilm*, where a document is described as being "reduced to often 1 percent of its original size on strips of film." The writer goes on to claim that "in library use, typically, a 90-times reduction is used to record up to 1,000 pages on a 4" by 6" card." But no standard library resources are actually filmed at this extreme reduction.

To *Compton's* great credit, the topics of energy, light, and mathematics receive impeccably correct coverage. However, *Sound*, besides using cycles per second for frequency figures instead of Hertz, incorrectly reports that on the decibel scale, absolute quiet is zero. Zero does not indicate the absence of sound but instead indicates only the lowest audible sound detectable by the human ear, approximately 26 percent above absolute quiet.

Objectivity. In its treatment of bias-prone areas, *Compton's* is successful in presenting balanced, open statements. The treatment of socialism and of recent U.S. presidents evinces an admirable, even-handed judgment. The representation of women is excellent across many dimensions. The separate article *Women* is current, and its accompanying bibliography includes the core of the literature. Illustrations are timely, clear, and varied. Occupations, women in media, and political aspects of sexism, often shunted aside in other sets, are taken into account.

In the selection of topics and biographies, however, a conservative, establishment view can be discerned. Abortion, for example, does not merit a separate article. Machiavelli, Mendel, and Thurgood Marshall are given only brief Fact-Index entries, although Maarten Maartens (a mediocre passé author), Admiral Marc Mitscher, and Dwight Moody are allocated separate articles. Military figures and accomplishments, along with traditionally held ethical positions and patriotic sentiments, are never slighted in *Compton's*.

Recency. Blood, oceanography, sculpture, moon, helicopter, and the Panama Canal receive remarkably current treatments, integrating information available as of one or two years prior to publication of the set. Other articles were found to be less satisfactory by the panel. In *Music*, major developments are omitted as are composers who have become prominent during the past decade. *Mexico* is extremely dated. No reference is made to the Bonampak temple frescoes, discovered in 1946. Rodolfo Vsigli, who died in 1961, is listed as still alive. *Mexico's* fact summary remains substantially as it was in the 1966 edition. Mexican agriculture and manufacturing statistics are more than ten years old, and population figures are based upon the 1960

census. The article *Erie and Barge Canals* contains no information regarding modern use of the waterways system. In the article *Birth Control*, there is a one-line reference to vasectomies, but no definition is given. The article on Konrad Lorenz leaves out his Nobel Prize, won in 1973. No entry was found for extrasensory perception. Despite these exceptions, revisions in the science, geography, and social science articles are adequate.

Quality. *Compton's* has less than one-third as many articles within the main text as other encyclopedias. Many biographies, cities, and small-scale topics covered within main articles are indexed or summarized in the Fact-Index. The articles in the main alphabet, on the whole, therefore are longer than in the other sets and similar to those found in the *New Book of Knowledge* in group one. Most geographical and biographical articles in *Compton's* are more than twice as long as those in *World Book* or *Merit Students Encyclopedia*. On a smaller scale, the Fact-Index acts somewhat like the *Micropaedia* in *Britannica III*, with the main encyclopedia performing like the *Macropaedia*. The main articles in *Compton's* are satisfying in their relatively thorough explanations and are more complete and multifaceted than their counterparts in other sets. Blood, science, motion pictures, the states, and U.S. presidents receive broad, fact-laden, systematic, and fully articulated coverages. In contrast, Ezra Pound, Machiavelli, schizophrenia, and many biographical figures are given shallow and only marginally satisfactory representation in the Fact-Index.

Style. As in several of the other encyclopedias directed to young people, the vocabulary progresses from the simple to the complex as one moves through the articles. Difficult terms are often defined in the text, but pronunciations are more commonly indicated in the Fact-Index. Because controlled vocabulary and reading levels were not established by the editors, the style of entries is mixed. Sometimes, if the writer is adept, the phraseology is fairly creative. For example, in the article *Eutrophication*, substrata and enzymes "float," the pill has hormones that "trick" the female ovary, and Darwin answered nature's "riddle."

As a whole, however, the writing is clear and matter-of-fact, rather than creative or particularly stimulating. The palate-teasing cuisine of Mexico actually is made to sound dull indeed. Nothing whatsoever is said about rice, pork, beef, chicken, or seafood. Difficult terms are not always defined, and the writing at times becomes too abstruse for the elementary school youngster. Generally speaking, the style of the encyclopedia is adequate but not scintillating. A large number of the articles are accessible to the young reader and suitable for a general family audience.

Bibliographies. There are nearly 400 bibliographies in *Compton's*. For articles on animals (e.g., *Cat*, *Dog*, *Horse*) annotated lists of readings are included. The librarian-contributor's efforts are evident in the annotated readings for "Literature for Children," "Books about the Sciences," "Storytelling," "Negroes," and "Folktales from Many Lands." Motion picture films have been added to some lists. A number of bibliographies are divided by level (e.g., younger readers, advanced students, teachers). *Mexico*, *Women*, and *Motion Pictures* have excellent, balanced, current bibliographies. In contrast, *Mayas*, *Man*, *Sociology*, *Mathematics*, *Aztecs*, *Freud* and other subjects lacked any leads to other sources. In numbers of bibliographies, *Compton's* lagged well behind *New Standard Encyclopedia*, *World Book*, and *Merit Students Encyclopedia* within group two.

Illustrations. *Compton's* has more than 30,000 illustrations. About one-sixth of them are in the Fact-Index; the remainder are spread throughout the main body of the text. About one-fifth of the latter are in full color. Biographies are invariably accompanied by photographs. Charts, diagrams, graphs, time lines, and "teaching" pictures are abundant in the set. The article *Women*, for example, is enhanced by timely, clear, and

varied illustrations that add to the reader's knowledge of occupations, women in media, and women in politics. Also, the Fact-Index cites illustrations, hence most of them are easily accessible.

The panel noted several instances where illustrations were either outdated or lacking altogether. *Whales* has too many reproductions of paintings instead of real-life photographs. *Mexico* carries the same illustrations it did ten years ago. For a visually oriented culture, this is a major deficiency. The article *Mayas* has no color photographs, no map of Mayan cities or pictures of ruins, nor any color representation of the fascinating frescoes unearthed at Bonampak in 1946.

Some of the illustrations are placed awkwardly, and others are not relevant to the content they are supposed to illuminate. A photograph indexed under *Underwater Archaeology*, for example, turns out to be a picture of a skin-diver equipped for his work in the article on deep-sea divers. This does not improve the reader's knowledge of underwater archaeology, nor is it worth the trouble of finding via the Fact-Index. A single illustration of the building of the Erie and Barge Canals accompanies a discussion of the administration of President James Monroe in the *M* volume. A more logical placement might have been within the article on canals, since no separate article was provided for the Erie Canal. Other illustrations (e.g., Louis Leakey in the Fact-Index) are placed on pages other than those on which related information is presented. In general, however, the illustrations are apposite to content and their quality is good.

Physical Format. *Compton's* comes in a durable and attractive buckram binding, and its open volumes lie flat. Letters and numbers on the spine can be easily distinguished. The paper quality is good, and the type, though relatively small, is clear and readable. Effective use of headings and indentions and judicious placement of type result in a functional and inviting page layout.

Special Attributes. Special features of *Compton's* are its Fact-Index; a reading guide organized by subject area that opens each volume; and sets of pertinent questions prefacing each volume with page numbers showing where answers may be located. Fact summaries accompany articles on major countries, the 50 states, and Canadian provinces. Reference-outlines, appended to 80 core articles, incorporate cross-references to other coverage in the set. (Dec. 15, 1978, p. 708)

The encyclopedia Americana.

30v. New York, Americana Corp., 1975—. illus. maps. plates. 26cm. sturdite \$625 (list); to schools and libraries, \$452.50.

Authority. All major articles in the *Encyclopedia Americana* and many of the smaller ones are signed. Approximately 72 percent of those examined by the panel were prepared by single contributors. About 21 percent of the writers could be identified in standard biographical directories. More than 6,300 contributors are or have been associated with preparation of this encyclopedia. From its inception, well-known scholars have been associated with *Americana*. Among contributors representing the sciences in the 1975 edition are Isaac Asimov, George Gamow, Max Perutz, Buckminster Fuller, Sir Bernard Lovell, Desmond Morris, J. Tuzo Wilson, and distinguished science faculty members from major universities in the U.S. and Canada. Contributors to language and literature include Eric Partridge, H. L. Mencken, Carlos Baker, Jacques Barzun, Roger Shattuck, Kenneth Rexroth, Hellmut E. Lehmann-Haupt, H. D. F. Kitto, Richmond Lattimore. Among other contributors of note are Richard B. Morris, Arthur M. Schlesinger, Jr., and Peter Quennell in history; Gilbert Chase and Gustav Reese in music; and Robert Coles, Donald Cressey, Louis M. Hacker, and Julius Marke in law and the social sciences. Experts in special areas are common; for example, Alexis Lichine (wines), C. B. Neblette (photography), and Stanley Rothenberg (copyright law).

Arrangement. Alphabetization of articles is word-by-word.

The 55,000 entries provide more immediate access to information than any other set presently on the market. About 40,000 cross-references combine with a thorough and elaborately subdivided Index (volume 30) to assist the searcher in locating information not listed in the main alphabet of articles. The Index with its 353,000 entries also acts as an instructional device because of the groupings under various headings and subheadings. For example, under *Jewish History and Society* there is an outline of Jewish history from pre-Mosaic times to the present period; under *Stomach*, one finds an inventory of diseases of the stomach; and within the extensive *Greece* sections, there is a list of 58 lesser divinities from Achelous to Zephyrus. Tables of contents precede many of the larger articles. Ready-reference information boxes are sometimes prominently placed to highlight specific information and statistical data. Preceding each sequence of articles on kings or other rulers bearing the same name, additional paginated tables of contents are provided. All in all, *Americana's* organizational aids are most successful.

Generally speaking, *Americana's* topics and biographees are accorded space in proportion to their established importance for readers in this country. Articles average between 250 and 350 words, longer than those in *Britannica's* Micropaedia but much shorter than those in *Collier's* or *Chambers's*. The physical and life sciences, along with mathematics, American history, and the social sciences are particularly well represented. In these areas the special character established by *Americana* in the early part of the century has been preserved.

Subject Coverage. *Americana* is unexcelled in its attention to U.S. place-names and biographical figures. For example, in the *L* volume among localities that fall between Lake City, Florida, and Lake Worth, Florida, the panel found 10 in *Americana*, while *Britannica* has entries for only four. These are useful for schoolchildren as are other topics where the practical is stressed rather than the historical, theoretical, or abstract. For example, *Punctuation* concerns itself with English language today; *Spelling* specifies rules and aids for the learner; and *Shorthand* covers both historical precedent and applications.

In the fine, applied, and performing arts, *Americana* sometimes disappoints. There is good coverage of the New Wave with references to specific films and influential directors of international fame, but for the U.S. there is no discussion of social problem movies such as the *Grapes of Wrath* or of gangster films. There are no entries for motion pictures under countries in the Index, even though there are entries for plays and for *Drama* and *Theater*. This may indicate that, at least as far as *Americana* is concerned, the motion picture is a minor art form. A similar imbalance can be found in the long article *Drama*. Renaissance, Restoration, Ibsen, and emerging realism are covered, but the Irish Renaissance, Victorian drama, and modern drama of individual countries are not. A reader would have to look under the names of countries in the Index to find specific information on drama. *Drama* itself devotes almost the same amount of space to Japanese and Chinese drama as to developments in the West. *Music* also is deficient in coverage. Italian operatic composer Puccini is not mentioned in *Romantic Movement* and the treatment of American jazz lacks depth. In *Romantic Movement*, there are no listings of musical composition titles; the separate articles on compositions fail to transmit a satisfactory feel for the dimensions and forms of the period. Orchestral forms, opera, chamber music, symphonic tone poems, nationalism, and composers of the time are not woven into an effective overall picture. In articles dealing with the arts, vital statistics, inventions, and straight facts are prominent; there is rarely an evaluation of artistic meaning or interpretation. In fine arts as well as school subjects, the pragmatic, real, and sensible are best revealed in the *Americana*.

Accuracy. *Americana's* errors are minimal, although the panel uncovered a few. For example, *Americana* states that

Horace Mann declined the nomination for the governorship when in fact he ran for the office on the Free Soil ticket and lost. The fugue is not limited to between 2 and 8 voices, it can have as many as 72. Pakistan is not a theocracy, because even though Islam is the state religion, it has no place in the administration and system of government. Finally, Thomas Shelton's shorthand system was introduced not in 1620 but in 1626 or later. In contrast to these minor slips, the precision and accuracy of articles in mathematics, sciences, and technology is nearly impeccable.

Objectivity. With its long-standing credentials as an American encyclopedia, *Americana* concentrates more upon this country's technical, scientific, cultural, political, and social attitudes and history than any of the other adult sets. Its view is more national than international throughout. For example, *Consumption* cites only U.S. statistics, and *Collective Bargaining*, though accurate as far as it goes, accords little attention to Great Britain, where unionism had its roots. *Motion Pictures* discusses the contributions of Charlie Chaplin and Mack Sennett and then moves on to Bob Hope rather than to the Alec Guinness films or Jacques Tati's *M. Hulot's Holiday*, a direct descendant of Chaplin.

For other subjects the intrusion of ideological bias is rare. Perhaps the statement that no society ever staked more on the ability of adults to learn than did the U.S. is an overstatement in the *Adult Education* article when one considers progress made in other countries, particularly Great Britain. Also, in *Criminology*, the "labelling school" point of view is set forth, the contention being that research emphasis should be placed on the definers of crime rather than the criminals (receivers of the labels). In this article it is implied that minorities are somehow transmogrified into criminals from without, independent of the lawfulness or lawlessness of their conduct. The possibility that higher arrest rates for illegal behavior (or other things besides persecution by the government) is systematically ignored. A much more blatant bias is articulated in the *Pakistan* article, where the contributor characterizes the country as "a geographical monster doomed from the beginning," lards his statements with anti-Pakistani propaganda, and appends a six-title bibliography, five works of which are by Indians or pro-Bangladesh Americans. The sixth title is by a Pakistani, Bin Sayeed, but was published in 1967 before the war.

In larger scale articles on national political and biographical topics, there is less evidence of bias than in *Britannica*. Treatments of controversial subjects and biographees are seldom inflected with bias. *Communism*, *Economics*, *Ezra Pound*, *Chile*, *Homosexuality*, *Abortion*, *Psychology*, and *Parapsychology* all refrain from subjective commentary. The encyclopedia deserves commendation for the impartiality that dominates its content.

Recency. *Americana* is not as current as *Britannica* or *Collier's* but more up to date than *Chambers's*. Although according to the publisher over 13,000 articles were added during the 1970s, either on new subjects or in the form of entirely fresh coverage of older material, the total effect is one of slight lag. The publishers revise the set by doing two things concurrently: (1) they systematically and thoroughly rebuild individual volumes according to a set sequence, and (2) they interpolate new facts, such as death dates for biographees, major political events, or significant scientific breakthroughs as necessary. This amounts to a total turnover of approximately 10 percent of the content each year. Despite this conscientious and logical approach to revision, many instances of staleness were noted by the panelists. *The Special Theory of Relativity* and Newton's *Laws of Motion* both employ cgs units of energy instead of the currently used mks units. There have been more recent developments involving lasers and nuclear fusion than the ones referred to in the article *Lasers*, and x-ray lasers are not mentioned at all. *Map Projections* includes too little about aerial

mapping, and *Typewriter* omits discussion of the new self-correcting machines. The bibliography for *Career* is not current, and the outlook for economists' employment "with salaries second to none" does not apply to the current job market. The treatment of Kashmir leaves out the Tashkent Declaration and 1971 conflict between India, Bangladesh, and Pakistan. *Supreme Court* does not move past the Warren Court and much of the coverage of music and ballet is ten years old or more. Place-name inclusions, comprehensive as they are, leave out Lake Jackson, Texas, a fast-growing town established in the 1940s.

In sharp contrast, such topics as criminology, adult education, and money are very current indeed. Remarkably, deceased persons such as Comenius or John Dewey are placed in contemporary settings. Comenius is tied to education for women and the modern principles of curricular organization, while Dewey's relationship to modern educational philosophy is made clear. The encyclopedia is nicely aligned with secondary school programs because of its thorough representation of American history, current events, nuclear energy, family finances, home economics, drug abuse, nutrition, clothing, and personal care topics.

Quality. As mentioned earlier, most articles in *Americana* underscore the practical aspects of the subject. They are clear, logically arranged, and generally progress on a continuum from simple facts to more complex explanation. In a typical article such as *Bowling*, the presentation is pragmatic, not scholarly. Sections on pins and balls, basic rules, and basic techniques and a glossary of bowling terms stress practical aspects of the game. The books and pamphlets in the bibliography are essentially rule books. Diagrams of scoring with useful information on approach, delivery, and pin spots are included along with one particularly helpful picture of different types of bowling pins. Most of the other encyclopedias describe them less efficiently in prose. Bowling terms in the text are italicized, and details on how to hold the ball are specific, e.g., "thumb in 12 o'clock position." Another article, *Typewriter*, offers the most thorough and lucid explanation found by the panel. Since mechanical operations and typists' objectives are enumerated, the article could suffice as a self-tutorial. *Drama* is especially effective, beginning with general dramatic theory and then gradually expanding into specific examples in various modes, times, and countries. *Bayeux Tapestry*, contributed by a staff member of the Metropolitan Museum of Art, concentrates chiefly upon physical aspects and on the work's importance to "students of armor, fortification, ships, costume, architecture, astronomy," and historical research in general. The excellent article on Carl Jung is divided into biographical and theoretical sections, the latter containing clear explanations of his terminology and importance in the field of psychology. Applications of his theories are also described. Biographies in general were found to be of high quality. In the sciences, articles present valid, precise technical and theoretical information useful for readers who need a good general introduction. Data are not sufficient for students majoring in science and seeking advanced treatments of subjects. The presentations are best suited for superior junior high school and older students of moderate ability.

The panel's major complaints concerning quality centered upon one of the almost unavoidable consequences of adherence to a specific entry approach to subject matter; that is, fragmentation of descriptions. As an example, *Americana* offers no unified treatment of wind and wind patterns. The superficial commentary under meteorological origins has no logical order and provides no explanations of technical terms and causal factors. The *Meteorology* article lists factors that influence wind and three technical forces involved in a law but does not follow through with explanations. Similarly, the romantic period in music is dispersed in six different locations so that the reader must piece together his or her own picture of the movement.

Despite this reservation, the quality of coverage within the areas of traditional *Americana* strength (place-names, biography, American history, and science and technology) is unsurpassed in effectiveness of presentation for high school students and adults with modest educational backgrounds.

Style. In style, *Americana's* editors have sought to build a bridge between the specialist and the general reader. They have asked their experts to present facts and interpretations in an orderly and direct manner and to explain technical terms whenever it is necessary to use them. The *Americana* meets this challenge extremely well. There is not a superabundance of technical words, and those that are included are satisfactorily defined. The writing is lively, clear, precise, and understandable; the vocabulary and sentence structure are suitable for the intended audience. There are few slips from grace as far as language is concerned. In the *Faraday* article there are undefined terms, and in the Newton's laws article the style is pedantic and archaic, with phraseology such as "did not publish it entire," "index of refrangibility," and "whither he had sent." Such instances are exceptional, with the great majority of articles being ideally suited for good readers of junior high school age, above average sixth- and seventh-graders, and most adults who have completed their secondary school education.

Bibliographies. The bibliographies and associated articles are revised on the same schedule so that remarks made regarding quality, subject coverage, and recency apply with equal validity to the bibliographies. All of the substantial articles and many of the smaller ones include listings of titles that might be acquired or already owned by a well-stocked school or public library. The tendency is to cite practical, accessible, recent publications in association with articles that have been recently revised. Titles cited for *Ballet*, *Jazz*, *Adult Education*, and *Ives* are out-of-date, while those appended to *Continental Drift*, *Unions*, most of the examined science articles and biographies, and *Bayeux Tapestry* are recent and of good quality. In line with the pragmatic emphasis of *Americana*, the books and annual directory in the bibliography for *Correspondence Schools and Courses* are guides to institutions and schools that conduct such courses rather than histories or studies of such institutions. In summation, *Americana* occupies a middle ground in terms of its bibliographies. Those in *Britannica* are more satisfying for the serious student and are more current on the average. The *Collier's* listings are more dated and not as conveniently placed.

Illustrations. About 20,000 illustrations are presented in *Americana* in a down-to-earth manner with no more than 5 percent in full color. Graphics often clarify operations and processes as in *Shorthand*, *Typewriter*, *Sewing*, and *Elevator*. In *Sewing* more than 50 individual drawings illustrate types of stitches, seams, finishings, and sleeves. More advanced topics in the sciences are accompanied by helpful illustrations. For example, *Embryology* contains drawings showing the development of the starfish, protostome, and frog from fertilized egg to young animal. For *Heart*, there are illustrations of types of heart disease and defects. *Map Projection* has abundant graphics that are uncluttered and judiciously selected. The handling of human subjects is equally effective. Although portrait photographs or other renditions of biographees are not numerous, those that appear are very good. Quite often informal or atypical rather than standard poses have been selected. Despite the paucity of color and intermittent lack of illustrations where one would expect them (e.g., *Troy*, *Isaac Newton*), *Americana* may be commended in general for its intelligent handling of graphics.

Physical Format. The bookmaker's art is successfully realized in *Americana*. The binding, colonial blue with navy blue panels on the spine, is dignified, distinctive, and durable. The gold letters and volume numbers on the spine are easy to read. Volumes lie flat when opened. The paper quality is excellent, and the type, though small, is legible. The page format is clean, but the type is somewhat dense. *Americana* has the demeanor of an efficiently designed and utilitarian reference tool.

Special Attributes. The complete texts of the U.S. Flag Code, Constitution, and other documents are reproduced in articles dealing with these topics. Glossaries are given for more than 40 articles (e.g., *Ballet*, *Cheese*, *Stock Exchange*, *Mathematics*, *Textiles*, and *Electronics*) treating subjects for which specialized vocabularies exist. Separate articles are provided for literary, artistic, and musical works of major magnitude, e.g., *Steppenwolf*, *Guernica*, and *Wozzeck*. Finally, there are separate articles summarizing events across different disciplines for each of the centuries A.D. The tenth century, for instance, has seven authors' summaries of general occurrences and happenings in Europe, the Islamic world, India and Southeast Asia, China and Korea, Japan, sub-Saharan Africa, and the Americas.

(Feb. 1, 1979, p. 886)

Encyclopedia international.

20v. New York, Grolier, Inc., 1975. illus. maps. tables. plates. 26cm. sturdite to homes, \$450; to schools and libraries, \$249.50.

Authority. Among the 70 subject advisors associated with *Encyclopedia International* are John W. Bennett, anthropologist; Irving M. Copi, expert in symbolic logic; and Robert K. Merton, sociologist. The 1,425 contributors include many notables across the complete gamut of specialties one would expect to find represented in an encyclopedia. Isaac Asimov, Gilbert Chase, Dudley L. Stamp, Allardyce Nicoll, and Eugene Ormandy have all contributed articles. Most articles exceeding 100 words are signed. These vary from full-scale treatments of countries and well-known persons to small-scale coverage of Mexican cookery, textiles, blood, and subways. The unsigned articles are generally geographic entries or brief biographical summaries.

Arrangement. The Index to *Encyclopedia International* is comprehensive and analytical. It includes about 120,000 entries and is arranged in an effective hierarchy of topics and subtopics. Four types of cross-references are also provided. Add to this the specificity of entry characteristic of the set, and convenient, sure access to the content is almost a certainty. Few incorrect entries were noted in the Index. The panel found one minor failing, however. A list of additional subjects where more information may be found (with notes as to whether there are accompanying illustrations) is provided in the Index. No pages are cited, however, for the additional subjects. In addition to the Index, the Study Guides included with some articles organize subjects so that the student beginning an article in an unfamiliar area (e.g., *Panama Canal* or *International Trade*) quickly gains a good preview of the topical territory.

Subject Coverage. Within the *Encyclopedia International* the coverage is most complete in American history, consumer education, home management, and current social problems (e.g., pollution, drug addiction, divorce). American revolutionary war battles, people, locales, and dates are very thoroughly covered. Even well-known Tories are covered in the set. General Putnam and Benedict Arnold receive fair and detailed portraits. Arnold's role in the Battle of Saratoga is characterized as controversial, and Putnam's early life and role in the Revolution is fully displayed for the reader. The writing is lucid and concise. Place-names, biblical figures, biography, and practical subjects for the vocationally oriented also are well represented. The sciences receive adequate treatment; the humanities, literature, and the arts are least well presented.

In comparison with the other sets in group two, *Encyclopedia International* has over 30 percent more articles than its closest competitor, *World Book*. In numbers of both biographees and geographic entries, it ranks first in its group. Like the *Americana* in group five (also published by Grolier), the *Encyclopedia International* contains numerous place-names. In sheer number of entries, only the *Americana*, *Britannica III*, and the *New Columbia Encyclopedia* surpass it. With few exceptions, the panel found that the length of articles across the range of subjects

examined was well calculated to reflect their relative importance.

Accuracy. *Encyclopedia International* has an especially low incidence of errors across all articles examined by the panel. Statements of fact seem to have been thoroughly authenticated, although one discrepancy was uncovered. The Woodrow Wilson article states in one place that he "was a minority president during his first term," while in the article *Electoral College* Wilson is described as being a minority president twice.

Objectivity. Although most of the *International's* articles are objective, occasionally contributors have been permitted to air their own views, and no opposing opinion is presented. Even when the credentials of authorities display their connection with vested interests or schools of thought, one cannot presume that the average reader will comprehend writers' leanings and look further for other opinions. The Woodrow Wilson article, for example, was prepared by August Heckscher, president of the Wilson Foundation. The article omits details about Wilson's stroke and subsequent incapacity to govern. Also absent from the article are situations in Wilson's career that reflect his intransigence and air of superiority. His errors of political judgment are not mentioned and the influence of his second wife not even suggested. The article *Women, Status of* contains undocumented opinions and makes no reference to recent legislation.

Fortunately, the great majority of topical and biographical treatments are models of objectivity. Freud, psychology, history, drug addiction, Union of Soviet Socialist Republics, political ideologies, Ezra Pound, religions, and minority cultures are accorded full, balanced articles in which documented statements of fact overwhelmingly outweigh fancy and supposition.

Recency. The panel found the currency of *International's* articles to be uneven. *Mexico* contains population statistics well below 1971 estimates, for example, and the article on Pancho Villa omits his status as "Hero of the Revolution"—an honor conferred on him by the Mexican Senate in 1966. The music and anthropology articles are about 10 years out of date. *Microphotography* does not mention ultrafiche or reader-printers and contains information no more current than that applying to the mid-1960s.

Technical, scientific, and social sciences topics are generally up to date, although a few lapses were noted. *Schizophrenia*, for example, still cites lobotomy and electrotherapy as treatments. Lobotomy is no longer accepted as a legitimate means of relieving mental disorders, and electrotherapy is used only in the most severe cases. Extrasensory perception does not receive a separate entry. Konrad Lorenz's Nobel Prize (1973) is not mentioned in the article about him, although bestowal of this honor is mentioned in the article *Nobel Prize*. *Abortion* does not include the landmark Supreme Court decision of January 22, 1973, in which a woman's right to an abortion during the first trimester was legally affirmed. In contrast, drug addiction, traffic, conscientious objection, consumer education, and ecology-related subjects have either recently been added to the set or have been updated to the mid-seventies.

Quality. The average length of an article in *Encyclopedia International* is under 200 words for biographies, about 250 for geographical entries, and slightly more than 400 for other kinds of entries. About two-thirds of the articles are rather short; the others, e.g., *Physics*, *Money and Monetary Systems*, *Labor*, and *Sculpture*, are much larger. Although compact, the biographies are satisfactorily complete and well-written statements. The representation of artists, scientists, musicians, and political leaders is fairly comprehensive.

At several points, panelists found information in the *International* that could not be found in other group two encyclopedias. Pavlov's conditioned reflex experiments are given their most detailed description in this set. The writer of *Rosetta Stone* mentions both Thomas Young and Champollion, who helped decipher the stone. The Heinrich Schliemann article

explains why he came to the U.S. to participate in the Gold Rush. On the other hand, the origins of executive privilege, buried in the article *Supreme Court*, are not traced, and no definition of the term is provided. The helicopter article leaves out the fact that DaVinci created the first drawing of a helicopter. *Autism* is a misleading article because the writer implies that autistic characteristics are inherent in everyone. Thus, "an example of autistic thinking may be seen in the fantasies of children who populate their world with imaginary creatures and objects. Autism, in adults, when carried to extremes, becomes the type familiarly seen in mental illness." Left out are the discussion of autism as a severe disorder and any enumeration of its symptoms. All in all, this is a simplistic and incomplete article.

Style. The style of the set is exceptionally lively. Abstract concepts are often explained with the use of plain and homely examples. Such potentially dry topics as memory and schizophrenia are enhanced by reference to situations close to the reader's experience. For instance, a reference to William James' experiment, wherein he memorized portions of Victor Hugo's *Satyr* before and after memorizing the entire first book of Milton's *Paradise Lost*, lends point to a statement in the article *Memory*. Also, graphic examples of symptoms appear in *Schizophrenia*.

Occasionally, however, the vocabulary used in scientific articles and elsewhere may be too advanced for younger readers, e.g., in *Mesons*, *Antimatter*, *Lwoff*, and *Trypanosoma*. The article *Mexico* contains such words as *salient*, *paracity*, and *patrimony* without explanation. An example of the occasional use of cumbersome phraseology occurs in *Women, Status of*, which states: "... neither should it seem remarkable that in the U.S., where of all Western countries working women are relatively the most disadvantaged, feminism should first reappear." Fortunately, such awkward and ponderous writing is not frequent.

Bibliographies. About 2,000 articles (slightly less than 7 percent) conclude with a list of books for supplementary reading. Typically, from three to a dozen or more titles are arranged in order of publication. Some of these listings are excellent; others are out of date or appropriate only for a senior high school or older audience. The Freud bibliography, for example, contains a sample of his most popular works with brief annotations. Ernest Jones' classic *Life and Work of Sigmund Freud* is also included. In other bibliographies accompanying biographical entries, the panel noted a discrimination in selection not found in the other sets within group two. Elsewhere, however, suggested readings are relevant but dull. The Paine and Machiavelli listings contain only one title each, 1961 and 1969 imprints respectively. *Physics* lists current textbooks of unexceptional value. *Women, Status of*, *Gandhi*, *Paleontology*, *Architecture*, *Africa*, and *Transportation* all list books, the latest of which were published in the early 1960s. In sum, "too old and too few" is the general impression the panel gained from perusing the bibliographies in this encyclopedia.

Illustrations. Illustrations in the *Encyclopedia International* are placed in proximity to related text, and captions are generally effective. The set's graphics are usually clear, pertinent, educational, and aesthetically pleasing. For some articles, e.g., *Aztecs*, the quality of the illustrations exceeds that of the text. Some illustrations, however, are not indexed and others, such as the Rosetta Stone, are incomplete, unclear, and outdated. In the article *Memory* there are no illustrations, but one is needed to elucidate properly Ebbinghaus's forgetting curve. In the article on Mayans appear two illustrations of architecture but none for hieroglyphics, stone pillars, the codex, their early dress, pottery designs, or stone sculpture.

Although there is less use of color in the *International* than in other group two sets, except for *New Standard*, the photographs that have been chosen are used to maximum advantage. For *Panama Canal*, for example, there are color photographs of

the present waterway and of excavations at the time of construction. A table illustrates levels between the Atlantic and Pacific oceans.

Physical Format. The binding is durable and inviting, with gold stamping and blue or red panels. The lettering on the spine is small, however, and the volumes do not lie flat when open. Paper quality is adequate. Page formats reflect sensible use of differing type and headings and discrimination in use of space. Inner margins are narrow.

Special Attributes. Unusual features in *Encyclopedia International* are study guides, career guides, and glossaries. About 330 major articles include study guides, varying in length from one-quarter of a page to a full page. They consolidate references to related articles, orient the reader to the topic, and provide a table of contents for the article. The career guides accompany more than 60 articles. Mining engineering is included with *Mines and Mining*, while *Home Economics*, *Physics*, *Anthropology*, and *Architecture* also have career guides. A small number of topics contains glossaries of technical terms, e.g., *Music* and *Textiles*. (Dec. 15, 1978, p. 709)

Funk & Wagnalls new encyclopedia.

27v. New York, Funk & Wagnalls, 1975—. illus. maps. plates. tables, 24cm. kivar, supermarket price, 49c for v.1, \$2.49 per v. for rest of set; school and library edition, \$84.95.

Authority. First published in 1912, *Funk & Wagnalls New Encyclopedia* has been repeatedly overhauled. In 1966 work began on the present edition, which was first issued in 1972. A board of approximately 300 consultants advised on the preparation of articles and topical coverages; about 500 contributors are associated with specific articles. Approximately 40 percent of the contributors appear in standard biographical directories (e.g., Barry Goldwater, Kenneth Boulding, William Douglas). Fully 10 percent of the total roster are deceased, although to *Funk & Wagnalls'* benefit this fact is clearly indicated. Wherever the names of the deceased are associated with such fast-moving topics as sports and the sciences, however, their presence cannot help but connote lack of currency.

Arrangement. *Funk & Wagnalls* is arranged alphabetically. Numerous cross-references are provided. The Index contains 193,000 entries, many of which are for illustrations. Different typefaces and indentions and the use of italics help make the Index easy to use. Among the Index entries checked, the panel found no errors.

Subject Coverage. *Funk & Wagnalls* differs from the other encyclopedia in group four in its mixture of biographical, geographical, and miscellaneous topical articles. Most encyclopedias commit more than a third of their space to specific miscellaneous subjects, e.g., green revolution, gremlin, continental drift, learning, Linotype, stained glass, study, etc. None of these appear as separate articles here—green revolution, gremlin, continental drift, and study are not even indexed as subjects treated within other articles. More than 90 percent of the coverage consists of biographical and geographical articles, with less than 10 percent given over to other subjects. Culture, politics, and history, however, are associated with the articles on countries, states, and regions. Special biographies also contain much information on subject fields. Geography and biographies in the fields of science, technology, and history comprise approximately 60 percent of the set's coverage; biographies in the humanities account for another 15 percent, which is higher than the normal proportion.

The panel observed that topics and biographees are emphasized in relation to their potential appeal to the American family. Horace Mann gets more attention than Comenius; adult education receives relatively extensive treatment. The long articles on drama and theater are effectively coordinated with sections listed in the Index under each country's literature. Africa, a

continent usually slighted in drama sections of many encyclopedias, is covered. The article *Motion Pictures, History of* is excellent because it embraces most of the subtopics readers would seek. Over 80 percent of the biographees in this subject chosen by the panel were easily located through the Index, although Louis and Auguste Lumiere, George Melies, and Anthony Asquith were omitted. The longest articles were those for Edison, Griffith, Chaplin, and Disney, as appropriate for an American readership. In contrast, Strabo receives more space than Mercator and the same amount as Henry the Navigator, even though the latter two would more likely be looked up by the intended audience.

The lack of discrete treatments of school-related topics, e.g., study, continental drift, and collective bargaining, makes the set inefficient for school use. But the editors have shown great skill in selecting and displaying key points in the topical articles. The article *Shorthand*, for example, is well balanced, with clearly defined divisions and proper stress on shorthand systems rather than history. *Business Education* is useful because of its discussion of business organizations and journals, while the Bangladesh coverage packs a lot of useful information into a very small space.

Accuracy. *Funk & Wagnalls* is a dependable source of information, more so than the other set in group four. Nonetheless, errors of fact occasionally were observed by the panel. For example, within *Bangladesh*, Biharis are incorrectly described as speaking Hindi instead of Urdu. Articles on lasers and Isaac Newton contain inexact phraseology and mistakes. In *Lasers* the paragraph labeled *Source* is clearly not correct, for it says "... a condition in which their electrons are located close to the nuclei." The writer of the entry on Newton incorrectly describes the gravitational force between two masses as being "inversely proportional to the square root" instead of proportional to the square of the distance between them. Within the same article, "rotating in orbits" should be "revolving in orbits." Newton is also credited with the development of the laws of refraction and reflection, an untrue assertion.

In contrast to the examples above there were a number of articles deemed by the panel as especially clear and precisely phrased. These include *Matrix Theory*, *Linear Algebra*, and *Boolean Algebra*. *Correspondence Education* contains a brief but accurate view of the field's development in the U.S. *Funk & Wagnalls* provides the date for the establishment of international correspondence schools—1890—but *New American* does not. Biographies of educators are free of any departures from facts found in established biographical directories.

An example of unusual reliability occurs in the article *Renaissance Theatre (England)*. Two theaters were given patents allowing them to build during the Restoration. They are most often identified as the Covent Garden Theatre and Drury Lane, although Covent Garden was built 72 years later. The original theater was correctly identified by *Funk & Wagnalls* as the Dorset Garden. All in all, the set provides a sure footing for the searcher around the full circle of subjects.

Objectivity. *Funk & Wagnalls* is, with few exceptions, an extremely balanced encyclopedia, although the tone in *Criminology and Penology* and *Federal Bureau of Investigation* tends to be conservative. Criminals are painted as the poor victims of forces beyond their control, with the state (along with the criminologists who buttress its convictions) wanting only to assist these social orphans. No white collar crimes, political crimes, lax or overly zealous law enforcement, or organized crimes are brought into the discussion.

Within the treatment of French theater, the panel noted another minor instance of editorial bias in favor of Moliere to the detriment of Corneille—even the illustrations stress the former playwright. Coverage of education emphasized the U.S., with other countries given scant space. Even though the rest of the world receives peripheral mention, nothing is said about alien

cultures and attitudes, a common occurrence. However, all political movements and ideologies are presented with candor and fairness, as are controversial subjects in the arts, abortion, and homosexuality and controversial persons such as Ezra Pound, Pizarro, Richard the Third, and Richard M. Nixon. A similar balancing of viewpoint is evident in the bibliographies provided at the conclusion of the set after the Index.

Recency. In its statistics as well as in its ability to keep up with scientific developments, social issues, and major events, *Funk & Wagnalls* is successful. Sewage disposal, data processing, and various other subjects within the sciences were confirmed by the panel as being up to date, as were articles dealing with narcotics and psychedelic drugs. The article *Typewriter*, however, had little information on modern machines, e.g., those with correcting devices. Also, the article *Jazz* is still basically a decade out of date, even though it has been revised within the past five years. *Criminology*, especially the section on causes, reads as though it were put together in the late 1950s. No mention is made of the rise of the symbolic-interactionist perspective in the 1960s, control theory, conflict theory, or subcultural theory, nor is there any reference to the victim surveys begun in the late 1960s to provide information on the "dark-figure" (unreported incidence) of crime. The article about John Dewey omits details of his life from 1931 to 1952, such as his participation in Trotsky's trial in 1937 and the honors he was awarded at Yale.

The article *Money*, on the other hand, is very fresh, with mid-1970s figures quoted. Similar are the treatment of educational television stations, recent legislation affecting education, enrollment statistics, numbers of schools closed down for financial reasons in the spring of 1973, and important Supreme Court decisions during the years immediately preceding the encyclopedia's imprint. Theater in America receives exceptionally current treatment. The article mentions 1975 productions and discusses the rise of "ritual" drama as an outgrowth of the theater of the absurd with its touches of musical comedy, picture projection, etc. *Hair* is properly used as an example of this form.

Quality. In the sciences, the long survey articles (e.g., *Chemistry*, *Biology*), supplementary entries (e.g., *Botany*, *Zoology*), and theoretical articles (e.g., *Relativity*, *Atom*, *Atomic Theory*) are clear and correct statements. However, Newton's laws of motion, Faraday, Yukawa, and telescopes all receive superficial coverage. The article *Telescopes*, for example, gives too much play to history and not nearly enough attention to newer telescopes; Kitt Peak and the coverage of radio astronomy are totally inadequate. Also, there is nothing said about the basic physics of telescopes, why reflectors are more popular, or what the distinctions are between reflectors and refractors. The illustrations do nothing to assist the reader's comprehension. Likewise, in *Wind Patterns*, many facts and names are mentioned but poorly explained, and little conceptual matter is included. The reader is told that the wind is set in motion by pressure, but there is no explanation of pressure and why it sets the air in motion.

Because of its brevity, *Business Education* could mislead. For example, there are references to the key punch and wiring board with no definition of their functions. *Shorthand* mentions the many editions of Pitman but omits discussion of revisions of Gregg and machine shorthand. *Spelling* includes in its last paragraph suggestions put forth by the Simplified Spelling Board but does not disclose which ones were adopted. *Punctuation* suffers from a lack of examples to go along with the definitions of marks of punctuation. *Bowling*, *Gregorian Chant*, and *Typewriter* also suffer from the constraints of limited space.

Social science articles were noted by the panel as being consistently effective, with the exception of a few biographies that are so terse that important facts are neglected. The entry on Carl Jung contains citations of theories with no explanation whatsoever.

In contrast, Milton Friedman is efficiently covered; no important points are missed in the summary of his major ideas and works.

Political happenings in the U.S. and abroad are well handled. The article *Kashmir*, for example, includes an excellent treatment of that region's political status. All articles on countries offer concise descriptions of governmental structures and legislatures, as well as political parties. The Van Gogh article is unusual in its attention to artists whose work was greatly influenced by him. The other encyclopedia in this group includes information only about those persons and styles that influenced the artist being discussed.

Bayeux Tapestry, *War of Roses*, and *William Morris* are brief articles that adroitly press much useful information into a small space. The Morris article, for example, gives not only a chronology of his life and associations but discusses the influence of his work and its style. Some of his poems are also listed. *Fugue* is precise and well defined, a term often misconstrued in encyclopedias. American jazz is summarized in an attractive article from which it is easy to extract needed facts. Charles Ives, Igor Stravinsky, and Virgil Thomson are covered in accurate, well-written, current articles. In addition, Anton von Webern, Georges Auric, George Antheil, and William Billings—all lesser-known composers and figures in the humanities—are succinctly summed up in *Funk & Wagnalls*, though they are often not represented in other encyclopedias.

Style. The writing in *Funk & Wagnalls* is straightforward, but at times the vocabulary moves beyond the grasp of the average adult. For example, in *Larynx*, the words *pharynx*, *hyoid*, *epiglottis*, *cricoid*, and *arytenoid* are included without explanation. *Map* is logically laid out but contains terms such as *gnomic* and *orthographic*, which have their explanations scattered over several paragraphs. The style of composition is developmental for most articles, leading from definition to expansion to example. The text is such that it should be useful for all but the youngest persons in its intended audience. The intelligent middle schooler (grades six to eight) should be able to contend with a majority of the articles; most of the text will pose no problem for the adult.

Bibliographies. Patricia Breivik has prepared an 8,000-title annotated bibliography with the help of 20 assistants representing a cross-section of types and levels of library. A preliminary list of about 150 "writings significant to the western world," which ranges from Homer and Erasmus to Kate Millett, Charles Reich, and Alvin Toffler, is followed by a bibliography subject list of about 160 specific topics (e.g., "Adoption," "Youth," etc.). The next section contains the balance of the bibliography arranged by broad heading, e.g., "Philosophy," "Interior Decorating," "Man and His Environment," which is then further divided and subdivided. Although the books and other cited sources are generally logical and satisfactory in quality, the listings are not integrated with the articles in the encyclopedia.

Illustrations. *Funk & Wagnalls* is not as lavishly illustrated as many other encyclopedias. Only about one in eight illustrations is in full color. Major biographies, such as those on Mercator, Horace Mann, Igor Stravinsky, and Carl Jung, usually are accompanied with black-and-white reproductions of portraits, drawings, or photographs. These are generally expressive, well-placed, and clear likenesses. Sports are often accompanied by diagrams of playing areas, lineups, and positions. Articles on electric power systems and the United States have handy graphics showing respectively the operation of the power and political systems. Effective color illustrations enhance articles on artists, architectures, art movements, and countries. Intriguing color photomicrographs depicting moon rock fragments, anatomy of the damselfly, and chemical compounds decorate the article on the microscope. *Typewriter* has six effective black-and-white illustrations, but those in the article *Shorthand*, while nice to look at, do not increase the viewer's comprehension of

the various systems. *Conservation* needs more maps or charts showing erosion and other problems and how they are combated by conservationists. The maps accompanying geographical articles have been contributed by Hammond and are of adequate quality.

Physical Format. Bound in simulated red leather covers with gold lettering, the volumes in this encyclopedia lie flat after they have been opened. The paper, though of only average quality, is opaque and offers adequate contrast to the print. Type in varying weights and sizes and large running heads result in a functional, straightforward page design. The margins are adequate. This set is solidly put together despite its modest price. (Jan. 15, 1979, p. 830)

Illustrated world encyclopedia.

21v. Woodbury, N.Y., Bobley Publishing Corporation. [c1973]. 6,720p., illus. diagrs. maps. 24cm. fabrikoid \$59.95; to schools and libraries, 20 percent discount; now o.p.

Authority. This set was first published in 1954 as the *Illustrated Home Library Encyclopedia*. In 1955 an enlarged version was issued under the title *Illustrated Encyclopedia of Knowledge*. In 1958, after acquisition of publication rights by its present owners, Bobley Publishing Corporation, further revisions were made in the text and graphics and the work reappeared as *Illustrated World Encyclopedia*. It has been marketed through department stores and supermarkets but is now available only by direct order from the publisher. The editorial director and editor-in-chief are Edward and Roger Bobley respectively. They are assisted by a 12-member editorial staff and 105 contributors and consultants. Among them are university faculty and a few well-known celebrities, such as Harold S. Vanderbilt of the New York Yacht Club, Mario Pei, the philologist, and General Alfred M. Gruenther, former president of the Red Cross. Many of the other persons are retired or deceased. Articles are unsigned and individual contributors' assignments are not identified.

Arrangement. The arrangement of the articles in *Illustrated World* is alphabetical, letter by letter. Each of the first 20 volumes has two parts, a general encyclopedia and a section entitled "Literary Treasures," which contains synopses of classic works found on the reading lists of schools and colleges. Volume 21 is the Index and Study Guide. This final volume also contains a pronunciation guide, Index of Characters and Places cited in the encyclopedia, and 16 pages of maps. The pages are numbered continuously throughout the set, with the exception of the "Literary Treasures" sections, which are pagged separately. These sections account for over one-fourth of the contents of the volumes.

Cross-references are frequent in *Illustrated World* but not always reliable. For example, the *Abbey* article refers the reader to a nonexistent article on convents, and from *Accent* one is directed to "meter" for which there also is no coverage. The Index to the set is also inadequate because of omissions and errors. For example, civil rights is discussed in various articles, e.g., those on *Negro History*, *Civil Liberties*, and *Civil Rights*, but no entry exists in the Index to tie them together. The *Peace Corps* and *Laser* articles are also not listed in the Index. A number of incorrect page references were noted by the panel. Subheadings under topics are not provided. Only the pages on which articles commence are cited, so that the user must often turn to at least four or five separate references in order to track down a major article on a subject.

The Study Guide in the final volume is supposed to serve as a kind of classified index to the key articles in the set. However, the guide is not very useful because of its classification, e.g., *Minstrel* and *Conducting* are under *Musical Instruments* and *Composition*. In summary, the indexing, cross-references, and other guides for use of this set are all substandard.

Subject Coverage. The sciences, biography, arts, humanities,

and sports are all represented in this encyclopedia. Games, sports, and the Bible are covered fairly well, but in other areas, coverage is uneven. *Artillery* is covered in three pages, while *Anatomy* receives only half that space. While the article *Liberal* appears, an article on conservative theory does not. In music, such minor composers as George Frederick Root ("Tramp, Tramp, Tramp") and Fanny Jane Crosby (a prolific nineteenth-century writer of gospel tunes) are included, while composers Leonard Bernstein, Aaron Copland, and Benjamin Britten are not. Among American painters, Thomas Hart Benton, Grandma Moses, Thomas Eakins, and Winslow Homer can be found but not Andrew Wyeth or Jackson Pollock. *Banking*, *Blood*, and *Dolls* receive more than twice as much space as *Education* or *Medicine*. *Energy*, a key topic for the 1970s, has only a three-paragraph description. Other social issues, such as conservation or women's rights, receive little attention. Although articles are brief, in sheer quantity, *Illustrated World* is exceeded only by the more expensive *New Book of Knowledge*, a set costing more than seven times as much.

Accuracy. Errors and misstatements of fact are common in *Illustrated World*. A few examples will suffice. In *Film*, the reader is told that when "the word film is used by itself it usually means the kind of film you put into your camera or the kind used to make movies. This kind of film is made of plastic in long narrow strips that are rolled on spools." The light-sensitive emulsion that coats the plastic is not mentioned at all. *Republican Party* inaccurately states that there have been 13 Republican presidents and 4 Democrats since 1860 when, in fact, as of 1973, the copyright date on the work, there had been 6 Democrats in the White House. Also, Thomas Jefferson's affiliation was with the Democratic-Republican Party and not with the Republican Party as stated. Finally, the reader is told in the Stravinsky biography that the music for the *Firebird* was so strange and harsh that it caused a riot. Actually, it was the *Rite of Spring* that incited a public disturbance at its premiere. Other faulty characterizations of biographees and flaws in science articles were also noted by the panel, leaving the impression that *Illustrated World* cannot claim high marks for reliability.

Objectivity. In some controversial areas *Illustrated World* lacks sensitivity to current attitudes and occasionally omits information necessary for a balanced view. In speaking of civil rights issues and blacks, for example, the article writers grossly oversimplify the issues. In the article *Negroes* it is said that "during the 1950s and 1960s they . . . usually pursued their aims peaceably and legally, through organizations dedicated to their purpose, but from time to time they use violent means, such as riots, to express their resentment." There is a similar cast to the discussion of new African nations, their populace described as being "uneducated and backwards compared to Europeans." The article on Norman Thomas illustrates the incompleteness of some biographies, for it mentions his opposition to the U.S. entry into the two world wars but not his espousal of pacifism. Also omitted is Thomas' founding of the American Civil Liberties Union and any presentation of his political ideas. The panel sensed a tinge of moral indignation in some articles dealing with liberal and leftist subjects, such as Lenin, who is described as "a cruel dictator." On the other hand, Presidents Nixon and Harding are pictured as equivalent to Presidents Truman and Wilson. Finally, women in sports and politics are poorly represented.

Recency. The panel found evidence in *Illustrated World* of datedness affecting many subject areas. No articles were found, for example, on topics of recent years such as the computer, videotape, or the Equal Rights Amendment. Although Western Reserve University and the Case Institute of Technology merged to form Case Western Reserve University ten years ago, an article appears only on Western Reserve, which is also mentioned in the article on Cleveland. Neither kidney nor heart transplants are covered in the article *Surgery*. In fact, pure and applied science articles are generally a decade behind. In the

fine arts, jazz stops in the 1940s with Dizzy Gillespie and Ralph Flanagan, and a similar staleness pervades the art and architecture coverage. Articles in the social sciences and in sports also offer examples. In *Family*, for example, the writer neglects to mention adoption; nor is anything said about the status of the contemporary American family. In *Olympic Games*, lacrosse is still cited as an Olympic sport, and the longest race run by women is identified as the 220-yard dash. Women now run longer races in such track events as the 440, 880, and mile. These and other examples occur frequently enough in *Illustrated World* to limit its usefulness as an up-to-date reference tool.

Quality. As mentioned earlier, the quantity of entries in this encyclopedia is exceeded in group one only by the *New Book of Knowledge*. However, this has a negative effect on article quality. First, the size of the average biography is less than 250 words. Geographical articles and those on technical topics, which need a thousand words or more for their proper development, receive less than a third of that amount of space. The articles *Energy*, *Contemporary Technology*, *Conservation*, and those on such social issues as pollution and civil rights demonstrate most clearly the negative effect of this compression, while *Banking*, *Dolls*, and *Iron and Steel* have surprisingly hospitable dimensions. The panel felt that among the few articles handled well were *Wildlife Extinction*, *Ku-Klux Klan*, and *Capital Punishment*. Poor writing, redundancy, and omitted explanations also weakened many articles.

Style. The style of *Illustrated World* is internally inconsistent. The "Literary Treasures" section, which occupies 64 pages at the end of each volume, is couched in language more appropriate for high schoolers, while the articles in the body of the set are aimed for the most part at an intermediate through junior high audience, the encyclopedia's intended readership. Even here, however, there are instances where the writing includes words above the reach of the intended reader. In *Cork*, for example, "tannins," "buoyantly," and "impervious" are used without explanation, while in *Ku-Klux Klan* "vigilantes" appears without any explanation.

Some of the writing is overly repetitive. As an example, *Child-birth* carries the passage: "First, there must be a mother and father. In the mother's body there is everything needed for the growth of the unborn baby, and everything that is needed for the birth of that baby when it is ready to come into the world. Without a father, however, the baby could not be conceived, which is the word for the beginning of a new baby's development. There must be a father as well as a mother, or there could never be any babies." Abrupt tense and pronoun shifts occur rather frequently. Faults such as these detract from the readability of an encyclopedia. Finally, the panel discovered that some articles (e.g., *Department Store*) use personal pronouns almost exclusively in descriptions.

Bibliographies. None.

Illustrations. As its name would suggest, illustrations are abundant in *Illustrated World*. Their number in relation to text is higher than in any of the other encyclopedias in group one except the *New Book of Knowledge*. In some cases, notably the articles dealing with sports topics, they instruct the reader effectively and are well coordinated with the text. Even in these articles, however, many of the illustrations are too small (e.g., *Track and Field* and *Baseball*).

In general, the quality of graphics is disappointing; they are frequently undersized, dull, primarily black-and-white, and poorly captioned. Less than 20 percent are in color. This is most unfortunate in the arts. The Van Gogh article, for example, is accompanied only by a black-and-white print of his dramatically colored *Sunflowers*. This same reproduction is repeated in the article *Painting*, which also contains no color. Illustrations in *Juvenile Delinquency* and *Community* are blurred and do not add anything to the discussion in the text. The 22 color maps

in volume 21 are at too small a scale to be useful, while the inset maps appearing throughout the encyclopedia are indistinct and sketchy. In sum, the illustrations in *Illustrated World* do not live up to the promise of its title.

Physical Format. *Illustrated World's* binding is of durable and attractive leather-grained Kivar. Brown, pale yellow, and gold alternate on the spine. Gold, and brown and gold stamped letters lend the set a tasteful appearance. The paper quality is not good but offers excellent contrast. Volumes do not lie flat when open. The type is clear, but the layout is stolid and the margins narrow. In view of the set's modest price, however, the format is acceptable.

Special Attributes. Two special features of the set are its "Literary Treasures" section and Study Guide. The "Literary Treasures" (the concluding 64 pages of each volume) are plot summaries of over 500 literary works. The pagination for this part of each volume differs from that of the rest of the encyclopedia, but the titles of works described fall within the range of the letter span indicated on the spine of the volume. Use of the plot summaries in conjunction with preparation of book reports is recommended in promotional materials distributed by the publisher, but care must be taken to see that students do not substitute these for readings of the works themselves. The "Literary Treasures" are indexed in the final volume of the set. Included with the master Index is a Study Guide or subject classification of articles to be found in the encyclopedia. As pointed out previously, this classification is flawed and limited in its usefulness. (Dec. 1, 1978, p. 635)

The Lincoln library of essential information.

2v. Columbus, Ohio, Frontier Press, 1974. 36th ed. 2,536p. illus. maps. plates. tables. 28cm. kivar to homes, \$99.98 plus tax with gilding; to schools and libraries, \$97.95 with gilding.

Authority. Of the 106 contributors listed as being responsible for the contents of the *Lincoln Library*, more than 16 percent are deceased. There are few well-known persons in the group. William J. Redding is the current editor-in-chief of the *Lincoln Library*. No articles are signed in this set.

Arrangement. *Lincoln Library* is arranged by sections, which the editor calls "departments." Paging is continuous throughout the two volumes, with about 1,000 pages in each. The first volume contains five departments: "English Language," "Literature," "History," "Geography and Travel," and part of "Science." The second volume completes "Science" and continues with "Mathematics," "Economics and Useful Arts," "Government and Politics," "Fine Arts," "Education Biography," and "Miscellany." Each volume is equipped with an accurate master analytic index containing about 25,000 entries. Ancillary finding devices include a detailed Table of Contents, Index of Dictionaries and Glossaries, Index of Tabulations and Charts, Index of Illustrations, and twelve one-page alphabetized subject indexes—one for each department. There are also cross-references in the text, but these are not frequent.

The departments are put together so that a reader can learn in a self-tutorial manner. "History," for example, begins with a definition of the discipline, then proceeds with "American History" and "Commonwealth of Nations History" to "Latin American History" and "World History." From there the discussion moves to the "Ancient Cities," "Peoples of the World," and "The Two World Wars" and concludes with a "Dictionary of World History" and a Table of Periods, Events, and Movements of World History. With the aid of a thumb index, those who wish to explore independently the subjects covered in *Lincoln* will find its arrangement effective. Others may find it arbitrary and complicated. For example, psychology and geography are both considered sciences instead of social sciences. Psychiatry is buried in the miscellaneous section along with sports. There are no articles on individual states, motion pictures, motor vehicle designs, flowers, or other specific topics.

Since the Table of Contents appears only in the first volume, readers are forced to backtrack continually in order to locate the various subjects. Persons used to the simple alphabetical arrangement of most American encyclopedias will find more disadvantage than advantage in the *Lincoln*'s structure.

Subject Coverage. The most successfully handled topics are in the sciences, history, and mathematics. Articles on the earth sciences, astronomy, physics, chemistry, life sciences, and psychology provide adequate definitions of basic concepts and processes, such as fission, mechanics of liquids, zoological classification, and the fundamental aspects of psychology. The social sciences are less well treated. Geography, education, government, and economics are found in separate sections; sociology and anthropology are omitted. The education section is very dated, with undue emphasis placed on the Stanford and Army Alpha Tests and developments in the field prior to World War II. The junior high school is labeled a "radical reform," and video tape is described as an invention "too costly to be practical for extensive school use."

The biography section has entries for Robert Sproul, Harlan Hatcher, and Russell Conwell, none of whom are now considered to be major figures in education, but lacks entries on George S. Counts, Ivan Illich, Edgar Z. Friedenberg, and Lawrence Cremin. Dutch painters Anton Mauve and Paul Potter and designers Paul McCobb and Walter Teague are given biographies, while Richard Hatcher and Beatrix Potter are not. Artists are fairly well represented, with only a few major Americans not given space, e.g., Larry Rivers, Ben Shahn, Josef Albers, and Lyonel Feininger. Composers do not fare as well. Charles Ives, John Cage, Erik Satie, Virgil Thomson, and Ferde Grofé are among the more prominent omissions.

Among the subjects not found by the panel were language development, Wankel engine, ethology, adolescence, crime, expressionism, aggression, prison, homosexuality, and continental drift. There are several instances where prominent persons are not allotted space commensurate with their importance. Rosseter Gleason Cole and John Gneisenau Neihardt receive more space than Collette, Aaron Copland, and Carl Jung. Kurt Vonnegut, Jr., receives almost as extensive a biography as Dostoevsky.

Accuracy. The panel found articles on mathematics, physics, chemistry, economics, sciences, and history to be accurate. Also, DNA, microbiology, and some areas in the life sciences are handled with expertise. In other areas, however, *Lincoln Library* has fallen behind the other encyclopedias in group three. Examples can be found in articles dealing with the earth sciences and psychology. The article *Atmosphere* is partly incorrect in that the mesosphere and thermosphere are omitted; in their place is the ionosphere, which is their equivalent only when temperature levels are being compared. In the brief article on Piaget, the term "intellectual age" is used instead of the more accepted "mental age." The writer of the Binet article suggests that three years of age was the first age level for which Binet's test was developed, another case of misinformation. The Voltaire article cites the year 1758 as the publication date for *Candide*, whereas all other sources checked list 1759.

Objectivity. Because *Lincoln Library* does not treat turbulent and controversial subjects—or those aspects of well-known subjects—its fairness in handling topics of this sort is seldom questioned. In the article on Sigmund Freud, his concepts of the id, ego, and superego are not mentioned, nor are his theories of the psychosexual stages of development. Erikson's forays into psychohistory do not appear in his biography. Socialism is defined only in its original Marxian terms, as feeding upon economic crises, dedicated to the total abolition of capitalism, and loyal to the proletariat of all lands. There is no acknowledgment of the broader forms congenial to capitalism that have developed in Scandinavia or other countries. The Equal Rights

Amendment, discrimination, the drug scene, and other controversial topics receive no mention at all.

Recency. The *Lincoln Library*'s articles on business cycles, air pollution, linguistics, the physical sciences, and architecture are most current. Matters of contemporary social concern, such as modern sexual mores, the women's movement, communications media, housing, and innovations in the arts are not given sufficient attention. Arguments over the effectiveness of American education and the appropriateness of busing as a means of hastening integration do not appear. Biographees not relevant to a 1970s audience are retained (e.g., Crawford Greenewalt, John Augustine Ryan, Kenneth MacGowan), while notable recent figures are excluded (e.g., B. F. Skinner, Abraham Maslow, Fritz Perls). The discussion of experimental music is about 40 years out of date. American sculpture ceases with the Borglums and Malvina Hoffman. Although the treatment of the gross national product is accurate and recent, other aspects of economics, the Bretton Woods Agreement for example, are not up to date. Linus Pauling's article includes nothing about his theories on vitamin C and chemotherapy, while *Industrial Psychology* stops at World War I. In addition, some of the population statistics now need revision.

Quality. Among all of *Lincoln Library*'s articles, the panel found the best explanations for topics within the fields of mathematics, business and economics, history, world languages, and DNA and RNA. The brief but excellent coverage of number theory and trigonometry carries through to a succinct and effective introduction to calculus. This discussion is accompanied by superior illustrations and completed by referral texts that were considered outstanding at the time of their publication (1954–64). Traditional examples not acceptable to persons conversant with the "new math" are employed, however, even though texts (e.g., the School Mathematics Study Group series) committed to an innovative approach are cited in the bibliography. In the department on language, there are suggestions on proper English usage, as well as information on letter writing, public speaking, and forms of literary composition. The "Education" department has a relatively comprehensive exposition of the origins of intelligence tests. The department on biography deals effectively with persons important in political history, such as Oliver Cromwell or Thomas Wolsey, as well as on American statesmen and military and business leaders.

Much of the other coverage is not comparable in quality to that found in other encyclopedias in this group. African literature includes references only to H. Rider Haggard, Alan Paton, and other white writers. Australian literature does not include Patrick White. Margaret Atwood and Mordecai Richler, prominent Canadian authors, are omitted from the coverage of that country. Inadequate accounts are provided for Dostoevsky, Montesquieu, Voltaire, Adam Smith, Piaget, and Euclid. The influence of Montesquieu's writings upon the American Revolution and the Constitution is not covered. Adam Smith's travels are mentioned but not the reasons for his journeys or persons he visited. Euclid is identified as a native of Alexandria, but the major significance of his work is not conveyed to the reader, nor is his important fifth postulate included. The versatility and effect of Piaget's writings are not illuminated, and the "Education" department is devoid of references to this key person in the field.

Style. The reading level is suitable for the intended audience, the ten-year-old to adult. The Dale-Chall vocabulary lists and readability index formulae have been employed. Whenever off-beat or advanced terms are introduced, they are defined. Despite the inclusion of such subjects as calculus, cytology, and microbiology, the language remains unencumbered by abstruse terms. The style flows smoothly and logically in most of the articles.

Bibliographies. At the conclusion of each of the twelve departments in *Lincoln Library* appear classified lists of works. For

"History," for instance, there are 66 titles broken down into 11 categories: Ancient history, America, Latin America, Russia, Africa, and so on. America has 15 titles, Africa 2, the other categories 4 to 12 titles each. Dates of publication range between 1958 and 1966. For "Economics," the most modern title is 1964; Heilbroner, Galbraith, Samuelson, and other notable writers in the field are not represented. The "Education" listing is as old, and key authors Kozol, Friedenberg, Holt, Goodman, and Silberman are omitted. "Mathematics," "Fine Arts," and "Government and Politics" are all out of date, while some areas in the pure and social sciences have no bibliographies at all. Bibliographies are not a strong feature of the *Lincoln Library*.

Illustrations. There are about 1,000 illustrations in the *Lincoln Library*, 375 of which are in full color. The maps, concentrated in the atlas section of the "Geography and Travel" department, are prepared by C. S. Hammond. Included are 6 two-page maps and 49 others, illustrating topography, agriculture, and industrial resources. These are small but have excellent definition. National flags are also illustrated.

Black-and-white illustrations of average quality appear, generally in groups of half a dozen or so. Within "Literature," for example, one finds on both sides of a single plate illustrations from *Huckleberry Finn*, *Don Quixote*, *Oliver Twist*, *Jane Eyre*, and five other fiction favorites. Elsewhere there are full-color illustrations that are pleasing but not necessarily related to nearby text. Examples include moon shots and a photograph of the B-747 jet.

Physical Format. The set is in a serviceable black Kivar binding, and the volumes lie flat when opened. Gold letters and numbers on the spine indicate both inclusive paging and the departments contained. Unfortunately, although the "Science" department extends into the second volume, this fact is not shown on the binding. The paper is thin but of good quality. The type is clear though rather small. Double-page maps are difficult to read because they continue too far into the gutters.

Unique Attributes. The *Lincoln Library* has several unusual characteristics. With the exception of the *Volume Library*, *Lincoln Library* is the only encyclopedia in group three to depart from the usual A-Z format and present its information in a classified subject sequence. Another feature is the presence of subject dictionaries and glossaries within many of the departments. One element to be appreciated by self-teaching users is the sets of test questions and answers appended to all departments except "Biology." (Jan. 1, 1979, p. 768)

Merit students encyclopedia.

20v. New York, Macmillan Educational Corporation, 1975—. illus. maps, tables. 28cm. pyroxylin-coated fabric, to homes, \$529.50; to schools and libraries, \$260 plus \$6 shipping. Discounts for multiple purchases.

Authority. The editorial direction of *Merit Students Encyclopedia* is in the hands of seasoned editor-lexicographer William D. Halsey. The approximately 2,000 contributors and reviewers include about 1,000 college and university administrators, plus many persons from organizations and institutions, such as the American Iron and Steel Institute, Harvard University, the Portland Cement Association, Port of New York Authority, and a score of U.S. government agencies. A small number of retired or deceased individuals (e.g., J. Edgar Hoover and Lieutenant Commissioner John J. Grace) are listed along with 23 officials of Roman Catholic colleges. Other well-known persons are Glenn T. Seaborg, Barry Ulanov, Richard Ludwig, Boris Goldovsky, and John Hope Franklin. No attempt is made to distinguish between contributors and reviewers.

Almost all articles in *Merit Students* are signed. More articles are assigned to single contributors than in some of the other encyclopedias. Although this may result in less variety of opinion, the unity of articles relating to the same central theme appears to be stronger than in other encyclopedias.

Arrangement. The Index of *Merit Students* contains about 125,000 entries and is sufficiently analytical to provide access to the encyclopedia's subject content. Illustrations are indexed, which insures their accessibility even when they are only indirectly related to topics or biographies (e.g., the portrait of General Pershing in the Woodrow Wilson article). Cross-references are also effectively used in this set.

Subject Coverage. *Merit Students* is strong in sociopolitical subjects and American history. Colonial life in the Americas, the U.S. armed services, conservation, the geography of the North American continent, and communications media receive best representation. Scientific topics are less thoroughly covered and not always explained in sufficient depth. The article *Enzymes*, for example, does not indicate how these biochemical catalysts function. Literature and the humanities are least well presented. Since *Merit Students* was created only recently (1967) it does not contain the residue of dated topics often found in other sets. It is an intellectually diversified encyclopedia, reflecting adult liberal attitudes of the mid-twentieth century.

Because there are fewer entries in this set for the humanities in comparison with the other group two sets, some important topics that deserve separate attention are weakened. Mexican literature, for example, is immersed within an article on Latin American literature. Authors Jaime Torres Bodet, Octavio Paz, Carlos Fuentes, and Margarita Paz Parades are not mentioned in the larger overview treatment.

A disproportionate number of separate entries for colleges and universities appears. Perhaps this is an attempt to answer the needs of college-bound "merit students." Nevertheless, college directories and guidance counselors should surely provide more current data than can be presented within an encyclopedia framework.

In the balance between biographical, geographical, and miscellaneous coverage, *Merit Students* stresses the miscellaneous with 47.8 percent of its articles (among group two sets) in this category.

Accuracy. Accuracy in *Merit Students* is consistently high. Only minor errors were noted in birthdates and death dates in a few biographies. Also, the figure of 16 million listed as the total population of the Incas at the peak of their civilization is considerably larger than the 12 million estimated in other standard sources. One might also take exception to the labeling in an Index entry of Konrad Lorenz as an ornithologist, when indeed he has become renowned as the father of ethology, the comparative study of animal behavior.

Objectivity. Objectivity remains one of *Merit Students'* strongest assets. Political movements, controversial personalities, sensitive issues skirted or circumvented in other sets—all are met head on by this encyclopedia. Communism, for example, is covered fairly and thoroughly, with a skillful blend of historical data, theoretical background, historical and sociological roots, and present-day consequences. Controversial figures Pancho Villa, Diego Rivera, Dmitri Shostakovich, and Ezra Pound are given succinct, objective summaries with no polemical editorializing. Pancho Villa's status as "Hero of the Revolution" is recounted here, for example, so that the reader can see him as a bandit as well as an antiestablishment Mexican folk hero. Feminism, libido, and abortion are examples of other controversial topics that receive forthright coverage.

Recency. Because of its continuous revision process, *Merit Students* promptly updates its articles, particularly those that contain political or scientific data and events with wide-ranging social implications. Newcomers to political office, recently completed architectural landmarks, and breakthroughs in medicine have been quickly assimilated into the fabric of the set. Dates for statistics are clearly labeled. For example, in *Mexico*, per capita income figures are for 1968, tourism statistics are for 1969, and population figures are taken from the 1970 census.

The article *Abortion* refers to the 1973 Supreme Court decision affecting women's rights.

In the arts, however, *Merit Students* is no more current than the other encyclopedias in group two. Composers Reginald DeKoven and Oley Speaks are included, while Elliott Carter, America's most notable mid-century writer, and Hans Werner Henze do not appear even as index entries. ESP is represented with a main article, but the latest study cited is J. B. Rhine's 1930 research; the two bibliographical references to Rhine are from 1947 and 1958. The statement that "current experiments and research are published in the *Journal of Parapsychology*" does not compensate for the absence of later monographic citations. In the article *Railroads*, the Rail Reorganization Act of 1973 is not mentioned, while the article *Transportation* informs the reader that the "Canadian National Railway plans to have several such turbine trains traveling between Toronto and Montreal for the 1967 fair." In short, the rate of revision is only moderately successful.

Quality. *Merit Students* handles scientific biography well, though it is more selective here than in some of the other sets. Such political topics as electoral college and totalitarianism receive clearer and more thorough description in *Merit Students* than in other group two sets. History, especially American history and that of earlier civilizations, is effectively presented. The article *Mayas*, for example, contains much detail not found in the other encyclopedias directed to the same audience. This is a meticulously researched summary organized in logical and smoothly written chronological passages. Superior editorial control is evident; other articles share this quality.

There are many instances where *Merit Students* picks up points missed in other sets. The article *Helicopter*, for example, traces the history of the craft's development and acknowledges Leonardo DaVinci as the person responsible for the first drawing of a helicopter. Further, the set is unique in referring within the article *Rosetta Stone* to John David Akerblad's and Baron Silvestre de Sacy's participation in the stone's translation. No other encyclopedia in group two mentions de Sacy; one other includes Akerblad.

Style. *Merit Students* employs clear, workaday English. The text for advanced subjects progresses from simple to complex concepts; terms unfamiliar to the student are defined as they are introduced. The panel that surveyed group two encyclopedias was unanimous in its high opinion of the language employed in *Merit Students*. Its vocabulary usually matches the reading level at which the subject matter involved is taught in the schools.

Bibliographies. The panel found that there were about the same number of bibliographies for the topics analyzed in *Merit Students* as there were in *New Standard* and *World Book*. The panel judged the bibliographies, included only for major articles, to be generally current, skillfully selected, and appropriate for the intended audience. Articles on totalitarianism, Woodrow Wilson, Mexico, Sigmund Freud, music, and Gandhi carry brief but excellent listings. A few of the other articles, e.g., *Woman Suffrage* and *ESP*, include citations that are out of date or omit important titles in the field. Particularly useful are the bibliographies, such as those for *United Nations* or *Democracy*, that are divided into books suitable for younger readers, general readers, and advanced students. Surprisingly, the listings for U.S. presidents, mythology, mathematics, and music are not divided this way.

Illustrations. Selection and placement of graphics in *Merit Students* reflect astute judgment. An example of this is the attractive assortment of portraits accompanying biographical articles. Oil painting reproductions are used for Thomas Paine and Niccoló Machiavelli; a Cartier-Bresson photographic study of Gandhi adds tonal depth to his article, and Juarez is illustrated with a portrait painted by Diego Rivera. Illustrations of such technical processes and concepts as television transmission and reception and non-euclidean geometry convey the basic infor-

mation necessary for an elementary comprehension of the subject. The article *Panama Canal* contains color photographs of the canal, and the operation of the Gatun Locks is clearly demonstrated with diagrams. Although full color is employed less generously in *Merit Students* than in *Compton's*, *World Book*, or *New Caxton*, its intelligent utilization is evident. Although other encyclopedias in group two may surpass *Merit Students* in quantity of illustrations, the set exercises superior taste and discrimination in the usage of graphics.

Political, physical, thematic, and other specialty maps prepared by Rand McNally are utilized by *Merit Students*. The company's Cosmo series maps appear with relevant articles and are accompanied by indexes to their contents. Population figures are given in the map indexes. Five transparency sets are inserted to illustrate topics amenable to their use. In the article *Color*, for example, blue-green, magenta, yellow, and black additive layers are on the separate sheets that collectively create a four-color photograph of a bowl of fruit. The reader can experiment with different combinations of sheets and improve his/her comprehension of color photography.

Physical Format. This set is bound in dark green, grain-textured, triple pyroxylin-coated fabric. The volumes stay open with use. Gold letters and numbers on spines are easy to read. The paper quality is mediocre-opaque but with an off-white tone and coarse texture that does not set off graphics to best advantage. Page layouts and typography are effective, and inner margins are generous.

Special Attributes. A distinctive aspect of *Merit Students* is the inclusion of italicized summary data at the heads of many biographical and place-name articles. The entry for Clinton Joseph Davison, for example, commences with "American physicist. Born Bloomington, Ill., Oct. 22, 1881. Died Charlottesville, Va., Feb. 1, 1958." while the entry for Union City is headed "A city in northeastern New Jersey, In Hudson County, Pop. (1970) 58,537." (Dec. 15, 1978, p. 711)

New American encyclopedia:

a treasury of information on the sciences, the arts, literature and general knowledge. Editor-in-chief, John B. Phelps; publisher and managing director, Leonard Klingsberg. 20v. Philadelphia, The Publishers Agency, Inc., 1974. 7,570p. illus. ports. maps. 24cm. kivar. \$249.50.

Authority. The most recent forerunner to the *New American Encyclopedia* was the *World Scope Encyclopedia* published between 1945 and 1963. During the mid- and late 1960s, versions of it were sold in supermarkets under such titles as *World Educator*, *World University*, and *New American*. Between 1968 and 1973, the editors took a poll of content most commonly found in seven competitive sets and attempted to consolidate this information in the edition under review. The publisher of the *New American Encyclopedia* is Leonard Klingsberg, and its editor-in-chief is John B. Phelps.

The set is published by the New American Corporation, S.A., Brussels, Belgium, and has been printed by Mondadori, Verona, Italy. The contributors, consultants, and sources of information include 327 individuals and 13 organizations. Organizations include the American Forest Products Industries, Inc., Bermuda News Bureau, Canadian Information Service, National Education Association, New York Historical Society, and Westinghouse Electric Corporation. Among the individual contributors, few are prominent. Clarence Barnhart, Gilbert Chase, Louis M. Hacker, and Bergen Evans are well known, as are Allan Nevins, John Tasker Howard, and Curt Sachs, all deceased since 1971. About 20 percent of the contributors are archivists, librarians, or directors of historical societies. Another 10 percent are merely identified as to profession (e.g., author, guidance counselor, physician, consulting engineer) and provided with a city location. No articles in the encyclopedia are signed.

Arrangement. The *New American Encyclopedia* is arranged

alphabetically. There are a limited number of cross-references, a fact that discourages users from locating related information since *New American* lacks an index. An example of inadequate cross-references is found in the article *Energy*, which concludes with a single *see also* reference to *Measurement*. The user thus has no guide to the additional information contained in the articles *Power*, *Sound*, *Electricity*, *Force*, *Thermodynamics*, *Heat*, *Entropy*, *Momentum*, *Quantum Theory*, *Joule*, *Radiation*, *Light*, *Relativity*, *Schrodinger's Equation*, *Alpha Particles*, *Beta Particles*, and *Horsepower*. In other areas the panel noted a similar sparseness of cross-references. This is a disastrous deficiency, because adolescents and young adults to whom the set is directed will not be able to sense essential relationships between and within subjects or gain any appreciation of the historical development of knowledge.

Subject Coverage. This encyclopedia has a balanced representation of biographical, geographical, and miscellaneous topical articles. Separate articles are provided for concepts, terms, laws, and biographies in the sciences not found in the other group four set. Actinism, acceleration of gravity, Carnot cycle, Periastron, maxima and minima, and Maxwell's equation have their own articles. Many European scientists relatively unfamiliar to Americans are given space, as are obscure Renaissance artists and South American writers, Berber dynasties, names out of classical mythology, and villages in Scotland, the USSR, India, and Africa. Coverage of contemporary figures includes Johnny Carson, Dean Martin, Bella Abzug, Elliott Carter, Patricia Harris, Robert Mathias, Barbra Streisand, James Reston, and George Meany. Most of the human subjects apt to be sought by the user are well represented. In the social sciences coverage is less satisfying. Gordon Allport, Alfred Adler, and Stokely Carmichael are missing, as are the popular topics aerosol, aging, Alcoholics Anonymous, permafrost, Planned Parenthood, CARE, carnauba wax, and solar energy.

Accuracy. There are more errors and questionable statements in *New American* than in the other set in group four. For example, in the description of the Second Law of Thermodynamics, the writer states that "... energy was redefined to include heat as a form of energy in motion." This is incorrect, because the energy is not in motion. Imprecise language occurs elsewhere in the descriptions of lasers, relativity, and Heisenberg's Uncertainty Principle. In the discussion of telescopes, the Mount Palomar telescope is described as possessing only two times the light-gathering power of the Mount Wilson telescope when in fact the capability is quadrupled. *Continental Drift* creates the impression that this theory was first proposed in the 1920s by Alfred Wegener instead of during the previous century. *Strabo* the geographer is given a birth date of 54 B.C. instead of 64 B.C. and the dates for many early Renaissance and classical persons are not consistent with those found in other standard tools. As an example, George Grosz, the expressionist artist, did not die in New York City; he returned to Berlin just before his death. Also he emigrated to the United States in 1932, not in 1935. Geographical features are sometimes not given the same dimensions found in other standard sources. For example, Mount Hermon in Syria is generally given a height of 9,232 feet, not the 9,150 feet cited in *New American*. In addition to these factual errors, typographical errors are common in this encyclopedia.

Objectivity. The *New American* is generally free from bias in its approach to topics such as women's rights, the treatment of sex, ethnic biography and history, mental telepathy, socialism, and controversial figures both current and historical. Only in the coverage of foreign countries and general historical figures was bias noted, apparently more the result of incomplete documentation than of purposeful prejudice on the part of the contributor. For example, the encyclopedia ignores the causes of the dispute over Kashmir in its treatment of this region. No indication is given as to why the fate of Kashmir was left undeter-

mined at the time of the division of the Indian subcontinent, and no rationale is provided for Pakistani or Indian claims. The article on Richard III lacks any explanation of his abilities and gives no attention to the underlying causes of his actions. The language of the article is such that his guilt and cruelty are foregone conclusions. In contrast, the editors have taken great pains to balance the major pressing issues and personalities of mid-century USA. *Abortion*, *Women's Liberation*, *Drugs*, *Wildlife Preservation*, and *Hinduism* are presented in small but adequate articles. Arthur Godfrey, Janis Joplin, Joe Frazier, Rafer Johnson, Jackie Gleason, S. I. Hayakawa, and Angelica Kauffmann all rate articles with accompanying pictures. *New American* consistently maintains a candid and open posture.

Recency. Among areas examined by the panel, the coverage of popular television personalities, conservation, pollution, drugs, sports, politics, major countries, and some areas within the sciences seemed up to date. In many other fields, the discussions appeared to include nothing past the mid-fifties. *Ballet* omits Jerome Robbins' *West Side Story* and Balanchine's *Ashtarte*, *Don Quixote*, and other works choreographed after 1957. *Economics* is shallow and out of date. *Shorthand* contains no information on current techniques. *Adult Education* contains only a single specific reference to the American Association for Adult Education founded in 1926. There is no account of relevant legislation or events of either historical or current interest. In the consideration of continental drift, there is no acknowledgment of recent developments in paleoclimatology and paleomagnetism or to the sea-floor-spread hypothesis. And in the article *Supreme Court* the last cited case is *Baker v. Carr* (1962), and there is no mention of either the Warren or Burger court. It is clear from all of these examples that substantial revision of the *New American* will have to be undertaken fairly soon if the set is to remain an acceptable choice in its group.

Quality. Within group four *New American* has the most compact articles. The typical article contains slightly more than 200 words; biographies are about three-quarters that size, while treatments of geographical locations are considerably larger, averaging over 300 words. Commentary on miscellaneous topics varies, with some articles in the sciences exceeding a thousand words. Insects, evolution, and ecology subjects in or related to the life sciences, receive the most generous and satisfying descriptions. The physical sciences are not as deftly handled. Statements tend to be so short that undefined terms and spurious statements become unavoidable. For example, in *Lasers* one reads "two wave fronts that are out of phase will coincide at certain times but not at others" and that "the first laser was invented in 1960 after the development of the maser and the technique of 'optical pumping' increasing the number of atoms with a specific level of energy." In these cases, further elaboration is necessary to explain the process to the reader. The article on Hideki Yukawa is imprecise because of the statement "he announced the existence of the meson." "Predicted" would have been the proper word because the discovery came later. The coverage of Michael Faraday excludes any reference to his contributions to field theory and fails to note that his discovery of induction formed the basis for later electrical power generators.

In the social sciences, subjects of common interest receive comparatively more detailed treatment. *Depression*, *First Aid*, *Drugs*, *Disaster*, *Conservation*, and career descriptions are better covered than economics, psychology, or criminal justice. The stress is placed upon simple definitions of terms and short précis of prominent historical or popular American television and stage personalities. In music the range of representation is surprisingly wide, and the articles, though condensed, are adequate. Fine arts, archaeology, applied arts biography, and topical treatments are also concise but well wrought. For example, *Bayeux Tapestry* gives the measurements of the work, provides

an aesthetic judgment, and describes its subject matter and the reasons for its importance. On the other hand, *War of the Roses* is no more than a simple chronological listing of main events with no hint of underlying causes. The latter article would be confusing to any reader seeking an introduction to the subject.

Biographies are better for figures in the arts than for scientists and writers. The discussion of Copernicus provides nary a hint of the revolutionary impact that his heliocentric theory must have had on the intellectual and religious thought of the sixteenth century. Other biographies that seem pallid and unfinished are those provided for George Gamow and Albert Einstein. Nothing is said about Gamow's work with deoxyribonucleic acid (DNA) or his deservedly successful writings on abstruse subjects for readers who lack advanced education in science (e.g., *Creation of the Universe* and *A Planet Called Earth*). Einstein's panoramic effect upon the science of our times and his personal qualities are totally neglected. More important, the vast implications of the theory of relativity upon concepts of space and time are absent, as are any references to his early papers on Brownian movement and light.

All in all, one must characterize *New American's* articles as incomplete, superficial, and occasionally overtechnical without proper explanation of terms, at times fact-laden but not organized to facilitate learning.

Style. The expressed intention of the editors was the creation of a bridge between the world of the specialist and the general reader, including the student in the junior high school. This goal has not been achieved because of several reasons. First, in the technical articles special terms are often not properly defined. Consider the following description of ore production: "Ores can be produced from molten magmas through processes of differentiation by virtue of early crystallization and attendant gravity settling, diffusion, etc., or through the increase in concentration of ore-making constituents in the fluid portions of a magma remaining after the less soluble minerals have crystallized." Magma is not defined in the article. A second problem is incomplete development of concepts. For example, Mercator is "noted for his valuable additions to geographical knowledge," but there is no explanation of what the "additions" are. He is then given credit for the projection bearing his name, but there is no description of this map projection or of its use. At other times, the prose is unnecessarily urbane, as in this description of Debussy's *Afternoon of a Faun*: "His first mature work, *Prélude à l'Après-midi d'un Faune* (1894) was an orchestral evocation of the pagan sensuality contained in a Symbolist eclogue by Stéphane Mallarmé." Elsewhere one finds instances of faulty grammar or awkward articulation, e.g., "The most peculiar feature of the chameleon is the protective device by which it is able to change color to adapt to its surroundings, thus rendering them in appearance like the leaves or the branches of trees." In summary, the writing in *New American* is uneven and its vocabulary highly variable.

Bibliographies. Bibliographies of varying length, one to twenty or more titles, are appended to many of the articles. *Mercator* has a single reference, *Charles Ives* 2, *Chopin* 4, and *Fashion* 24. *Marx*, *Galileo*, *Edison*, *John Stuart Mill*, *Michael Faraday*, and *Shakespeare* have none. *Artillery* has three titles, while *Architecture*, *Ballet*, *Jazz*, and *Drama* have none. The quality and currency of cited works appear to be generally adequate, though there are a few exceptions such as the Nietzsche title on Wagner, hardly a dispassionate account of this composer.

Illustrations. Well over 40 percent of the illustrations in *New American* are in full color. The encyclopedia was printed by the firm of Mondadori in Verona, Italy, and the quality of reproduction is generally good. Sometimes the graphics are not placed conveniently and many of the illustrations run into the margins. The photographs of art objects, cities and landscapes, flowers, and birds, are most effective. Exceptions are the illustrations of

such European birds as the goldfinch, which differ from American species. The grackle and grosbeak also bear little resemblance to the birds usually seen in this country. Illustrations of processes and working parts of machines vary in their clarity. For example a diagram purporting to show global prevailing winds is ineffective because of ambiguous representation of wind directions using purple, blue, and green colors. Instead of indicating wind directions on the globe, the labels are provided at the points of inception and paths are not depicted at all. Also, the related text is inconveniently placed on the other side of the page. Despite these intermittent problems, the graphics in the set are greatly improved over those in the previous edition. Maps prepared by Rand McNally are good, and there is an effective mixture of full-color and specially drawn maps prepared by *New American* cartographers and dispersed throughout the set.

Physical Format. The blue-and-white Kivar binding with blue-and-gold letters is attractive and sturdy. However, the lettering on the spine is not readable from a distance, and letters are split so that there is sometimes uncertainty as to where one volume ends and the next one begins. Volumes lie flat when open, and the paper is high quality. The type style is aesthetically pleasing, and the page layout is easy to read. But there is too little space separating articles, so that divisions between different subject treatments can be easily overlooked by the browser.

(Jan. 15, 1979, p. 832)

The new book of knowledge.

20v. New York, Grolier, 1975. illus. maps. diag. 26cm. sturdite; to homes, \$350; to schools and libraries, \$234.50.

The first edition of the *New Book of Knowledge* was published in 1966, replacing the earlier, topically arranged reference work *The Book of Knowledge*, which had been a staple on the market between 1912 and 1957. The present set originated during a time of reform in educational curriculum, school library development, and federal concern with schooling. In 1957 when planning began on the new set, it was determined that *New Book of Knowledge* should be curriculum-oriented, with content and organization designed to fit the needs of elementary schoolchildren. Subject emphases within the set were derived from nationwide analyses of reference requests and the concerns and requirements of children in and outside of schools. Unlike other encyclopedias in group one, then, the intent and range of *New Book of Knowledge* is narrowly defined. It is strictly a children's set, designed to relate to normal elementary school curricula.

Authority. The present editorial director is Wallace S. Murray, former teacher and school administrator, who previously served as chairman of the elementary and high school research committee of the American Educational Publishers Institute and as vice-president and editorial director of a prominent educational text publishing firm. Martha Glauber Shapp is editor-in-chief. Before assuming this position, she had been curriculum coordinator for elementary schools in New York City. Lowell A. Martin is editorial consultant, and other persons notable in the library field such as Mary V. Gaver, Theodore C. Hines, and Maurice F. Tauber have contributed to the set. Among the more than 1,300 contributors are persons with distinguished credentials. Abba Eban, Richard B. Morris, George Balanchine, Abraham Ribicoff, and Frank Stanton are on the list. Articles exceeding a page in length, which include about 80 percent of the total, have been written or reviewed by authorities whose names are appended. For example, the assistant librarian of the Supreme Court reviewed the *Supreme Court of the United States* article, and Colin A. Ronan, fellow of the Royal Astronomical Society, provided *Solar Energy* and the *Solar System*. Mario Pei reviewed many of the articles on linguistics, and an author of popular books for children, a museum curator, and an ornithologist joined forces to prepare the series of articles on

birds: birds as pets, bird watching, extinct and threatened species, banding, bird habitats, history, and evolution. The caliber of contributors to group one sets is highest in the *New Book of Knowledge*.

Arrangement. The articles in this encyclopedia are arranged alphabetically, letter by letter. In addition to the extensive cross-references found in the articles themselves, an excellent Index on light blue paper is provided at the back of each volume. Designated as a Dictionary-Index it includes about 5,000 ready-reference articles and fact summaries to complement the 10,000 pages of material in the main body of the set. The Index entries analyze the articles. For example, following *Body Temperature* the reader can find discussions ranging from "anesthesia produced by lowering" to "how a nurse takes temperature."

Subject Coverages. The panel found that the editor's attempt to correlate the coverage of various subjects with those taught in elementary schools was generally successful. Areas neglected in the schools prior to the sixties (e.g., drugs, the role of women, consumer education, energy conservation, and most recently, values clarification) are accorded useful, clear, sensitively and authoritatively written articles. Values clarification is interwoven into the coverage of civil liberties, civil rights, and freedom of religion, speech, and press.

The typical article in the *New Book of Knowledge* is comparatively long, more apt to exceed 2,000 rather than 200 words. As a consequence, fewer biographical articles appear here than in most of the other sets in group one. In other areas, however, *New Book of Knowledge* offers proportionately more articles that directly relate to school activities (e.g., *Valentines*, *How to Make*, *Outlines*, *Composition*, *Public Speaking*). The life sciences as a group receive the most extensive articles, with *Birds*, *Plants*, and *Animals* each allocated 30 or more pages. The arts, music, and literature are a close second. Painting, music, modern art, modern music, American literature, architecture, baroque art and architecture, and many other cultural areas usually neglected in American juvenile sets are well represented. Science, mathematics, history, the social sciences, sports, and religion are given the degree of coverage that seems right for the intended audience. Recreational interests (button collecting, stamps and stamp collecting, bird watching, etc.) receive appropriate attention. Within this encyclopedia, Van Gogh, John Paul Jones, and ocean animals all get lively and surprisingly thorough descriptions, more complete than in any of the other encyclopedias in group one.

Accuracy. This encyclopedia has a very low incidence of error, although occasionally sweeping generalizations or contradictory language are interjected. For example, there is the statement in the article *Negro History* that "not a single Negro soldier paid attention to German propaganda." And in *Anarchism* appears the statement that anarchists "agree on only one thing: that government, laws, and authority are to blame for everything that goes wrong in human society" followed by the contradictory observation that anarchists fight only against "bad laws." However, this kind of lapse is rare. Particularly lucid and complete treatments are given of historical figures in the American Colonial period and American politics and government, areas in which both *Harver's Junior World* and *Oxford Junior* exhibit weakness. For example, the *New Book of Knowledge* was the only encyclopedia to mention the full circumstances of Aaron Burr's arrest and that Burr asked for an apology but Hamilton refused. In science, technology, mathematics, and geography articles checked by the panel, no errors were noted.

Objectivity. Within its group, *New Book of Knowledge* is most conscientious in displaying opposing points of view on controversial issues and persons. The Irish situation is objectively portrayed from both Protestant and Catholic perspectives in an article that holds the reader's interest. The author of the Jackie Robinson article gives an honest account of the prejudice

he encountered as the first black to play major league baseball and also describes the role he played in civil rights before his death. Women pirates are included in *Pirates and Piracy*, a traditionally masculine article, and women sports champions receive equal play. Career-oriented articles (e.g., *Doctors*, *Aviation*, *Engineering*) that in other sets incorporate largely masculine pronouns here are free from that syndrome. In general, within group one sets, the *New Book of Knowledge's* treatment of athletics exhibits the least national bias. It is preeminent in its fairness and unique in its disclosure of the tragic aspects of the 1972 Olympics. The discussions of the family, communal movements, kibbutzim, divorce, death, and adolescence are among other topics that receive positive, realistic summaries. Altogether, the panel found that ethnic, sexual, national, political, and religious biases in *New Book of Knowledge* have been assiduously avoided.

Recency. A continuous annual revision policy succeeds in keeping *New Book of Knowledge* up to date. Late-breaking political events, disasters, population changes, and shifting mores and attitudes are reflected in this set. For example, the energy crisis, the Northern Ireland situation, developments in space exploration, new family life-styles, civil rights, and N.O.W. (National Organization for Women) are represented, although the Equal Rights Amendment is not. Similarly, coverage in the sciences, arts, music, and social studies is consistently fresh. The panel found a few instances of staleness (e.g., Republican Party, Ku Klux Klan, Golda Meir, and segregation articles), but in general the facts and interpretations of a multitude of subjects can be counted on to be up to date.

Quality. On the average, the biographies in *New Book of Knowledge* exceed 500 words while geographical and other topical coverages are more than twice the size of those present in the other encyclopedias directed to young children. Over 24 percent of the space is given to geographical articles, the greatest amount among the encyclopedia sets in group one. Most articles are generous in size and employ an effective structure and clear language. Complex subjects, such as modern art or Christianity, have a chance to breathe. For example, juvenile delinquency is dealt with in depth as it occurs on farms and in suburbs, as well as in the cities, and the reasons for its existence are accurately set forth. Further, the article *Family* includes such basic sociological terms as "nuclear family" and "extended family." In summary, the panel was impressed by the orderliness of presentation, authenticity, inviting quality, integrity, and worth of information content throughout the set.

Style. The writing in *New Book of Knowledge* is generally comprehensible, stimulating, and well paced. The Dale-Chall readability formula has been applied to articles after their completion so as not to box in or inhibit the writing of contributors. While generally successful, this procedure allows advanced terms to creep into some articles with insufficient definitions for elementary school children. Even when the density of information within an article becomes heavy, the style sustains the reader's interest. For example, Van Gogh's summary covers his life, artistic style, personality, self-doubts, friendlessness, and status as a social outcast, and yet the author retains the reader's attention because of the article's varied sentence structure. The longer articles are usually divided into smaller units to aid the reader. The writing is almost always attractive, commands attention, and beckons the reader to further exploration. In sum, the quality and clarity of the language in *New Book of Knowledge* was thought by the panel to be one of its strong suits.

Bibliographies. In a separate paperback volume are *Home and School Study and Reading Guides*, selective bibliographies graded by levels: primary, intermediate, and advanced. About 12 percent of the articles have bibliographies in this volume (more than 6,000 titles altogether) with an average of six titles cited for each topic. Currency and good judgment are reflected in their selection. Because they appear in a separate volume,

however, the bibliographies are less likely to be useful than if they were appended to the articles themselves. The bibliographical guide is included in the price of the encyclopedia.

Illustrations. A pleasing mixture of full color, black-and-white, and two-color illustrations (photographs, drawings, diagrams of processes and working parts, etc.) and original artists' renderings graces the text. Of the 22,500 illustrations, slightly over 7,000 are in full color. There are on the average more than two illustrations for each page of text. Graphics are judiciously placed in relation to the text they illustrate. The use of color reflects editorial intelligence and discernment. For example, David Smith's sculpture is shown in an outdoor setting in full color, while pieces by Rodin, Lipchitz, and Calder, in which texture and shape are most important, are in black and white. The single-color illustration for Van Gogh in the *Painting* article is a reproduction of one of his most intensely dramatic paintings, *Field of Yellow Corn*. Animal wildlife and landscape photographs tend to be almost exclusively in color. Illustrations are generally large enough to permit details to show clearly, and biographical portraits are particularly effective.

In many instances the illustrations are self-tutorial. For example, in the track, baseball, and swimming articles, there is some background information in the text, but all of the teaching is accomplished through the pictures. There are no captions; the intent is to make the pictorial presentation so explicit that further explanation is unnecessary. Although there will be readers who feel that the text is insufficient, the emphasis upon graphics may be welcomed by younger children.

Maps in this set are produced by Diversified Map Corporation and Jeppesen and Co. Physical, political, and historical maps of good quality and sufficient detail appear throughout the set. Thus for states there are usually six different maps: (1) a map showing location in the United States, (2) a map showing landforms, (3) a land map outlining major topographical features and dimensions in miles, (4) a simple, uncluttered state map, (5) a map showing counties, and (6) a two-color map showing places of interest. To summarize, in density of illustrations, only *Britannica Junior* surpasses *New Book of Knowledge* among the group one sets. In quality, *New Book of Knowledge* ranks highest.

Physical Format. The *New Book of Knowledge* is bound in durable, handsome, and washable ivory sturdite. Gold lettering and red and blue panels appear on the covers. Paper quality is excellent, and page layout and typography have been skillfully planned. The pages lie flat when the set is being used. However, inner margins are not particularly generous, and many of the illustrations are partially obscured because they run into the inner edges of the pages. On the whole, the encyclopedia is sturdy and attractive.

Special Attributes. Unique to *The New Book of Knowledge* (within group one) is its provision of bibliographies. The *Home and School Study and Reading Guide* is helpful for teachers and media specialists who want to correlate the set's content with school curriculum. Parents will find the *Home and School Study and Reading Guide* handy in relating their children's home reading to their work in school. (Dec. 1, 1978, p. 637)

The new Columbia encyclopedia.

New York, Columbia Univ. Pr. (dist. by Lippincott), 1975. 4th ed. 3,072p. illus. maps. tables. 30cm. buckram \$79.50; to schools and libraries, retail less discount.

Authority. Conceived in 1927, the *Columbia Encyclopedia* has appeared in three prior editions: 1935, 1950, and 1963. This revision, entitled the *New Columbia Encyclopedia*, is the fourth edition. William H. Harris and Judith Levey, coeditors of the *New Columbia*, are both veterans of the reference work publishing profession. Assisting them were 47 senior, associate, and assistant editors and editorial assistants, 119 contributing editors, and 91 academic consultants. The consultants prepared

lists of articles appropriate for inclusion and operated mostly as advisers. Their writing was reserved for the new articles (about 7,000 out of the 50,515 total) and those retained from the third edition that needed extensive revision. Two-thirds of the academic consultants were from Columbia University. Others were affiliated with such institutions as the National Science Foundation and the Smithsonian Institution or with other universities. Richard B. Morris, the historian; the late Theodosius Dobzhansky, eminent biogeneticist; and Lawrence C. Kolb, the psychiatrist, are some of the widely known consultants. Although articles are not signed, their quality, consistency, and reliability were confirmed by the panel's examination.

Arrangement. *New Columbia* is arranged alphabetically. Although no index is provided, more than 66,000 cross-references (words in small capitals) direct the reader to related articles. Thus from *Aether*, *Knossos*, *Musket*, and *Ichneumon*, the user is sent respectively to *Ether*, *Cnossos*, *Small Arms*, and *Mongoose*.

The system is not, however, totally successful. From *Antinomianism*, one is referred to *Anne Hutchinson*—but not vice versa. There is no see reference from *U.S. Constitution* to *Constitution*, where it appears, although there is one from *United States Supreme Court* to *Supreme Court, United States*. Similarly, there are no see references from either *Constitutional Convention* or *Convention*, *Constitutional* to *Federal Constitutional Convention*.

Subject Coverage. *New Columbia* is evenly divided in its coverage of biography, geography, and miscellaneous subjects. The longest articles are reserved for national coverages, with the USSR and the United States each surpassing 9,000 words. Relatively obscure persons, such as Robert Dayton, the blind originator of Aroma Art, receive around 40 words, while biblical characters and chemical symbols are explained in single sentences. Across the spectrum of subjects, the physical and life sciences and mathematics articles are more sophisticated than their counterparts in the other group three encyclopedias. *Laser*, *Energy*, *Isomer*, *Thermodynamics*, *Nucleus*, *Reproductive Systems*, and *Annelida* move beyond the level reserved for the newcomer to the topic. Science receives a substantial eight-column article, and separate articles appear for chemistry, physics, biology, etc. Specific topics within these disciplines are also thoroughly covered. The separate articles in the social sciences are much shorter than those for the physical and life sciences. *Psychology*, *Anthropology*, and *Political Science* run less than a column each, *Education* and *Sociology* one column, *Geography* slightly more than that, and *Economics* two. Subtopics, however, are treated more extensively. *Socialism* and *Socialist Parties* occupy twice as much space as *Sociology*, while *Group Psychotherapy* is three times the size of *Psychology*. *Slavery*, *Child Welfare*, *Negro*, and *Supreme Court* are even larger, more than 3,000 words each. Art and music are not handled synoptically but are given separate categories, such as types of music and art, national movements, individual genres, etc. Newly emergent nations, ill treated in other contemporary sources, are given current and insightful descriptions in *New Columbia*.

New Columbia has exhaustive representation of important place-names, including all U.S. localities exceeding 10,000 in population; this continues one of its traditional strengths. Sizes of articles reflect historical and contemporary political factors with no favoritism shown toward the U.S. Siberia and Wyoming, therefore, are discussed in similar depth; Russia, Turkey, Tanzania, Syria, and Antarctica get more attention than Ohio and Rhode Island. As for biographical coverage, the panel was unanimous in its approval of *New Columbia*'s decisions regarding relative emphasis upon notables across all the disciplines. Only in psychology was there regret; this was because of the exclusion of Fritz Perls, Carl Rogers, and Alan Watts and surprise at the omission of adolescence as a separate article. Specific

topics were covered extremely well in all fields examined. For example, *Electronic Music*, *Serial Music*, and *Computer Music* are there. In anthropology, although cognitive anthropology is missing, there are good articles on ethology, taboo, totem pole, etc.

Accuracy. Accuracy was checked across subject areas including music, painting, mathematics, organic chemistry, electronics, meteorology, philosophy, and Russian literature. Only in the articles *Intelligence*, *Ethology*, and *Piaget* were problematic statements noted. Under *Intelligence*, for example, is the observation that IQ "varies only to a small extent" over time, a statement not in accord with research findings. In *Ethology*, imprinting is defined as a form of "early learning." This, too, is incorrect; the concept came into existence to explain the acquisition of behavior not conforming to principles of learning. Finally, for Jean Piaget, there is the pronouncement that "philosophically his approach is phenomenological. What a child says he is thinking or doing is what he is thinking or doing." It has been shown, however, that Piaget's philosophical assumptions are not phenomenological—rather, he interprets statements and actions. Also, although the article says that Piaget was influenced by Claude Lévi-Strauss, it was as much the other way around. Apart from these areas of ambiguity, no other errors were uncovered.

Objectivity. Controversial subjects and those susceptible to simplistic misinterpretation fare extremely well in *New Columbia*. Abortion, totemism, peyote cult, socialism, and Ezra Pound are clearly and objectively handled. The set is not niggardly in its attention to foreigners. The only subject where there seemed to be a subjective element was psychology. Items dealing with concepts in this discipline appear to have a bias in the direction of the physiological explanation of behavior. This is confirmed in the selection of biographies.

Recency. The content of the *New Columbia* was consistently current across topics examined by the panel. Contemporary artists and composers, the Wankel engine, recent interpretations of the significance of continental drift, Bangladesh, Jonathan Miller (the rising English theatrical director), Amtrak, and late-breaking political changes and events are all included. Among group three encyclopedias, *New Columbia* was the most up to date in its treatment of crime. The Linus Pauling article mentions both his megavitamin theory and his use of chemotherapy for schizophrenia. Abraham Maslow, Carl Rogers, and Ronald Laing do not appear, however, and the nature-nurture controversy, which has reemerged in the past several years, is minimized.

Quality. In comparison with other group three encyclopedias, *New Columbia*'s articles are richer and more varied and satisfying. Electronic music, rock music, major biographies (e.g., Franz Boas, Euclid, George Washington, Leibniz, Saint Francis), and topical and national coverages are all three-dimensional. For Bangladesh, *New Columbia* provides a three-column article with extensive and current geographical, historical, economic, agricultural, and sociocultural commentary, further enhanced by an excellent bibliography and map. Dostoevsky enjoys superior coverage, the best among the four encyclopedias in this group. The article is lengthier and more informative and includes the often overlooked point that Dostoevsky was a serious precursor of Sigmund Freud.

Geographical coverage in this new edition remains extremely detailed. There are separate articles for Russia, USSR, Georgia, Turkmenistan, Byelorussia, and other Soviet republics, plus all of the major cities of the USSR. In the social sciences, the writer of *Inquisition* carefully distinguishes between the medieval and Spanish Inquisitions and prefaces the bibliography with an explanation of the biases that permeate most written descriptions. The article *Banking* traces the history of the subject back to Greek and Babylonian roots. Finally, the articles *Topology*, *Number Theory*, *Trigonometry*, and *Boolean Algebra* all incor-

porate sophisticated content without becoming unintelligible to the average reader.

The major disappointments in article quality centered in the fields of economics and psychology. In economics, Bretton Woods receives meager treatment, and major figures, including Friedrich Hayek, Joan Robinson, Kenneth Boulding, and Robert Heilbroner, are absent. Psychology is approached primarily from the behaviorist standpoint. For example, Rollo May is not given an article, nor is transcendental meditation. *Canoe*, *Selective Service*, and *Prostitution* each receive more space than *Psychiatry* (300 words).

Style. The writing in this encyclopedia has been carefully edited. There was agreement among the panel of readers that the language throughout was lucid, concise, and expressive. When relatively complex subjects in the sciences and mathematics are treated, the articles usually commence at the lower end of a vocabulary scale with simple definition. As the reader progresses through the article, the explanation becomes more sophisticated, both in language and in the level of intellectual thought. Even so, it was the opinion of the panel that the vocabulary in many instances lies beyond the range of today's typical high school student.

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Illustrations. The *New Columbia* contains 407 black-and-white illustrations, most of which are in proximity to related articles. More than half are maps showing small countries, islands, and other less familiar geographical sites; historical maps; and state and country maps. The maps are small in scale and show only major cities, boundaries, and outlines of areas. They and the drawings of plants and flowers and musical instruments are of least value, because the user of the encyclopedia will in most cases be familiar enough with the subject so that the illustrations add nothing to comprehension. The drawings of processes and forms, such as the photocell or meiosis, are much more successful. The 55 chemical formulas and specially designed charts (Nobel prizes, etc.) are also useful. The graphics are integrated with the text and expand, rather than decorate, the content.

Physical Format. Bound in blue buckram with a vellum finish, *New Columbia* is handsome and durable. Though no bantam weight (about 10 pounds), its thumb-indexing and the fact that it lies flat when open compensate for its heaviness. Type and layout are simple, aesthetically satisfying, and legible. The type is small but easy to read because of the generous leading. However, the computer-assisted composition in this edition imposes one limitation: the absence of paragraphs. This may be intimidating in articles that run over a column in length.

Unique Attributes. *New Columbia* continues its practice of

topics were covered extremely well in all fields examined. For example, *Electronic Music*, *Serial Music*, and *Computer Music* are there. In anthropology, although cognitive anthropology is missing, there are good articles on ethology, taboo, totem pole, etc.

Accuracy. Accuracy was checked across subject areas including music, painting, mathematics, organic chemistry, electronics, meteorology, philosophy, and Russian literature. Only in the articles *Intelligence*, *Ethology*, and *Piaget* were problematic statements noted. Under *Intelligence*, for example, is the observation that IQ "varies only to a small extent" over time, a statement not in accord with research findings. In *Ethology*, imprinting is defined as a form of "early learning." This, too, is incorrect; the concept came into existence to explain the acquisition of behavior not conforming to principles of learning. Finally, for Jean Piaget, there is the pronouncement that "philosophically his approach is phenomenological. What a child says he is thinking or doing is what he is thinking or doing." It has been shown, however, that Piaget's philosophical assumptions are not phenomenological—rather, he interprets statements and actions. Also, although the article says that Piaget was influenced by Claude Lévi-Strauss, it was as much the other way around. Apart from these areas of ambiguity, no other errors were uncovered.

Objectivity. Controversial subjects and those susceptible to simplistic misinterpretation fare extremely well in *New Columbia*. Abortion, totemism, peyote cult, socialism, and Ezra Pound are clearly and objectively handled. The set is not niggardly in its attention to foreigners. The only subject where there seemed to be a subjective element was psychology. Items dealing with concepts in this discipline appear to have a bias in the direction of the physiological explanation of behavior. This is confirmed in the selection of biographies.

Recency. The content of the *New Columbia* was consistently current across topics examined by the panel. Contemporary artists and composers, the Wankel engine, recent interpretations of the significance of continental drift, Bangladesh, Jonathan Miller (the rising English theatrical director), Amtrak, and late-breaking political changes and events are all included. Among group three encyclopedias, *New Columbia* was the most up to date in its treatment of crime. The Linus Pauling article mentions both his megavitamin theory and his use of chemotherapy for schizophrenia. Abraham Maslow, Carl Rogers, and Ronald Laing do not appear, however, and the nature-nurture controversy, which has reemerged in the past several years, is minimized.

Quality. In comparison with other group three encyclopedias, *New Columbia's* articles are richer and more varied and satisfying. Electronic music, rock music, major biographies (e.g., Franz Boas, Euclid, George Washington, Leibniz, Saint Francis), and topical and national coverages are all three-dimensional. For Bangladesh, *New Columbia* provides a three-column article with extensive and current geographical, historical, economic, agricultural, and sociocultural commentary, further enhanced by an excellent bibliography and map. Dostoevsky enjoys superior coverage, the best among the four encyclopedias in this group. The article is lengthier and more informative and includes the often overlooked point that Dostoevsky was a serious precursor of Sigmund Freud.

Geographical coverage in this new edition remains extremely detailed. There are separate articles for Russia, USSR, Georgia, Turkmenistan, Byelorussia, and other Soviet republics, plus all of the major cities of the USSR. In the social sciences, the writer of *Inquisition* carefully distinguishes between the medieval and Spanish Inquisitions and prefaces the bibliography with an explanation of the biases that permeate most written descriptions. The article *Banking* traces the history of the subject back to Greek and Babylonian roots. Finally, the articles *Topology*, *Number Theory*, *Trigonometry*, and *Boolean Algebra* all incor-

porate sophisticated content without becoming unintelligible to the average reader.

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providing definitions of biblical names, both personal and of places. (Jan. 1, 1979, p. 769)

The new encyclopaedia Britannica.

30v. Chicago, Encyclopaedia Britannica, Inc., 1974. 15th ed. illus. maps. plates. tables. 29cm. pyroxylin; to schools and libraries only, \$569 with discounts available on purchase of multiple sets.

Authority. The authenticity of content in *Britannica* is unexcelled in any other encyclopedia among the 22 examined by the panel. The following sampling of authors and associated topics demonstrates this. Ernest G. Simmons (*Dostoevsky*), A. J. P. Taylor (*Bismarck*), Matthew Josephson (*Edison*), Jerome Kagan (*Human Behaviour, Development of*), Jacques Barzun (*Berlioz*), Milton Friedman (*Money*), Charles Richter (*Earthquakes*), Elisabeth Kübler-Ross (*Death*), and Martin Marty (*Protestantism*). Geography, history, art and religion, music and the social sciences are subject areas for which *Britannica* has sought the most assistance from notable contributors. In comparison with other encyclopedias, the proportional number of writers in the sciences, mathematics, and technology is smaller. About 4,000 contributors are listed for the Macropaedia; another 2,250 names are identified as authorities for the Micropaedia. Because of overlaps, the total number of contributors is approximately 5,900. Only *Encyclopedia Americana* exceeds this figure. *Britannica's* contributors, however, include a larger number of internationally prominent persons, English, French, and Soviet scientists and authors. All of the articles in the Macropaedia section are signed, and even though the Micropaedia contributions are not identified, a roster of its writers is provided. A high percentage, 23.4, of contributors in both sections are represented in major biographical directories.

Arrangement. This edition of *Britannica* departs from past ones and utilizes a unique three-part structure: a one-volume Propaedia, ten-volume Micropaedia, and nineteen-volume-Macropaedia.

The Propaedia presents an elaborate outline of the world of knowledge in 10 parts, 42 divisions, and 189 sections. The content and findings of disciplines are outlined in the first nine parts of the Propaedia; the disciplines themselves (logic, mathematics, science, history, the humanities, philosophy) are outlined in part ten. Parts one through nine cover "Matter and Energy," "The Earth," "Life on Earth," "Human Life," "Human Society," "Art," "Technology," "Religion," and "The History of Mankind." The two largest parts are "Human Society" and "The History of Mankind." Readers interested in generic aspects of various disciplines and how they interrelate are advised by the editors to begin with the Propaedia. It also serves as contents guide to the Macropaedia's 4,207 substantial articles for which profuse references are given.

The Micropaedia, or Ready Reference and Index, is intended to serve the person seeking specific pieces of information. Appended to many of its articles are cross-references, either to more extensive treatments in the Macropaedia or to parts of Macropaedia articles bearing relevant information. Less frequently, "q v's" to related entries within the Micropaedia are provided. "How to Use" advice is found on preliminary pages in all volumes of the set, and an elaborate explanation of the structure of *Britannica* is provided in the introduction to the Propaedia.

There is no separate index to the encyclopedia. The substitution of the cross-reference system for an index, a fault repeatedly noted in criticism of this edition of *Britannica*, denies the reader easy access to much valuable specific information. For philosophy, law, history, theology, and economics, the three-part scheme works remarkably well. The panel found more coverage more quickly here than in the other group five sets. In contrast, the search for specific data was often thwarted by insufficient cross-references. Some examples follow.

The excellent color reproduction of Van Gogh's *Starry Night* in *Visual Arts, Western*, a rich Macropaedia treatment, is not referred to either from the Micropaedia or Macropaedia articles on the artist. The bibliography for the War of the Roses is located 70 pages away from the coverage of the topic, which occurs at the end of the *British History* article. *Monasticism* is well covered in a general Macropaedia article, and about 50 references to other coverage of the topic are provided. However, anyone seeking information specifically on monasticism in medieval Britain will have to search in many places and make up a separate file of pertinent references. Summing up this sort of frustration was the experience of a panelist who sought data on the subject of drama. The trek from the five-page coverage under *Theatre, Art of* in the Propaedia to Macropaedia articles, back again to *Literature* (in the Propaedia), and finally over to the Micropaedia was followed by examination of sectional bibliographies in *Art of Theatre* for the subtopics of *Aesthetics and Theory*; *Theatre, Western*; *Theatres and Stages*; and *Theatrical Production*. Looking further for information on dramatists, the panelist moved over to *Literature, Western*, a 174-page treatise arranged by period, country, and literary form. After more commuting back and forth from Micro to Macro for facts on specific theatrical subjects such as *Theatre of the Absurd*, *Abbey Theatre*, and *Commedia dell'arte*, the searcher began to encounter bibliographic overlaps and became irritated at having to piece together information from so many disparate sources. Eventually it took seven hours to find and read all the material on drama using all the available finding devices.

In short, the *Britannica* does not succeed in its attempt to serve as both a quick reference tool and study guide. The casual user cannot afford to expend the time to ferret out the mine of material in the set and will miss much that lies beyond the cross-reference network provided by the editors. On the other hand, a seasoned scholar, possessing the skill to trace the data, would probably not be consulting the *Britannica* for research purposes.

Subject Coverage. Biographical representation in *Britannica* follows a dual pattern; the Micropaedia is populated with contemporary figures. Sports notables, advertising designers, sexologists, scientists, and leaders of government currently in the public eye were found more often here than in the pages of other group five sets. Also included are obscure religious figures from the past, historians, artists, scientists, writers, anthropologists, other social scientists, and persons in the performing arts. Only in the area of American historical biography is *Britannica* surpassed by another set, *Americana*. The selection of biographies is exclusive and seemingly dictated by editors' preferences. In *Britannica's* comprehensive coverage of the performing arts, one finds Fellini, Godard, Antonioni, and Truffaut in the Macropaedia. However, among American composers of this century, Aaron Copland alone is represented. John Cage, Charles Ives, George Gershwin are not. And among painters, Jackson Pollock and Willem de Kooning, both abstract expressionists, are included, while exponents of such techniques as cubism, precisionism, and pop art (e.g., Marsden Hartley, Stuart Davis, John Sloan, Edward Hopper, Andrew Wyeth, Roy Lichtenstein, and Frank Stella) are absent.

Examination of the larger articles revealed that contemporary East and South Asian and African artists, culture, and geography are more thoroughly covered than in any other encyclopedia. The visual arts of the West, Western literature, the history of China, and biblical literature are all treated in articles exceeding 100 pages. *Britannica's* emphasis is directed toward the thoughtful inquirer who wishes to indulge in a leisurely pursuit of abstract and historical data. For example, while a reader can find more quickly in other encyclopedias detailed information on such subjects as Augustus Caesar, diamonds, dogs, or earthquakes, *Britannica* will, in contrast, yield much more factual and interpretive data about Saint Augustine, morality, aesthetics,

agnosticism, cognitive anthropology, death, the philosophy of law, and various religions. Also physical and economic geography, education, mathematics, and science are generously treated. It was estimated that about 41 percent of the total coverage was committed to mathematics, the sciences, scientific biography, biology, and medicine. Most important, the panelists succeeded in locating more sought after coverage in *Britannica* than in any of the other group five sets. This was not unexpected because of the immense number of articles (106,000) in *Britannica*, approximately two times that in its closest competitor, the *Americana*.

Accuracy. Errors of fact in *Britannica* are scarce. In the arts, sciences, historical biography, and humanities this set is probably as reliable as a work of its dimension can aspire to be. The articles in the 19-volume Macropaedia resemble those of other group five sets and in fact contribute more information than all the others put together. Repeated scanning by the panel revealed many instances where the delivery of first-rate, thorough, meticulously researched data was unsurpassed by any other encyclopedia, e.g., definitions of musical forms, the history of ballet, Bayeux tapestry, the physical sciences, mathematics, medicine, and zoology. In rare cases, inconsistent statements (e.g., in *Bangladesh*, the Muslims arrive for the first time in the country twice, during the eighth and thirteenth centuries) and clouded writing (e.g., in *Newton*, vectors are called arrows and descriptions of the laws of motion are imprecise) give one pause. More serious than any slippages of this sort are the cases where authoritative contributors, mostly persons representing the Soviet bloc, have applied interpretive prejudice to their descriptions of Russian localities and luminaries in the arts and sciences. These exceptions aside, the set will clearly continue and reinforce *Britannica's* reputation for veracity and reliability.

Objectivity. *Britannica* has been chastised by critics for lax editorial surveillance of Soviet contributors whose views differ from those held by Westerners. The panel discovered the presence of bias—albeit open bias because of the credentialed signatures for articles—not only in the content but in the selection of subjects included in the Macropaedia. For example, Nathaniel Bowditch, Karl Banneker, Arthur Holley Compton, and John Von Neumann do not appear in the Macropaedia, while A. N. Kolmogorov, an eminent specialist in the field of probability, merits an entry submitted by fellow Soviet mathematician Gnedenko. In modern Russian literature Fedayev, Bulgakov, Ehrenburg, and even Solzhenitsyn are left out, while Lermontov, considered a minor lyric poet in the West, receives a lavishly laudatory article by Muscovite literary critic Vladimir Viktorovich Zhdanov. Many articles have a strongly individualistic flavor, which has not been tempered or homogenized. *Isaac Newton*, for example, stresses Freudian analysis with the scientist being characterized as “psychotic” when neurotic might be more proper. Phrases such as “shriek of rage,” “such was his fury,” “mortal enemy” are in the article. Nevertheless, complex issues and biographical subjects often granted simplistic or chauvinistic treatment in other group five sets are probed deeply enough so that readers can sense more implications and subtleties than are revealed elsewhere. In summary, the contributors to *Britannica* are given a freer rein than is usual to air personal interpretations of issues and subjects. Therefore readers will gain by following as many of the references provided by the encyclopedia or dictated by their curiosity as time and energy will permit.

Recency. As one would anticipate in a newly created set (about 90 percent of the content is not carried over from the fourteenth edition), staleness of insight or data is uncommon, especially in the pure and social sciences. Only when subjects are discussed by writers unfamiliar with United States' involvements or in areas given a historical rather than current treatment does lack of up-to-dateness present itself. In *Adult Education*, for example, recent U.S. legislation and the role of public televi-

sion are omitted, while the latest machine shown in *Typewriter* was built in 1953. One cannot be as sanguine as *Britannica's* editors, who claim that because of its structure and content, the set is less likely to become obsolescent than are other encyclopedias. Continuous revision is anticipated for the quick reference section, Micropaedia. This will be possible because of the transcription of its text onto computer tape. The massive Macropaedia and Propaedia are expected to remain relatively immune to datedness with revision planned for a ten-to-fifteen-year cycle. Since American jazz and the serious music scene in the United States is presently nine or more years ahead of its description in *Britannica*, however, more frequent updating seems necessary. Further, it is inevitable that the descriptions of lunar geology, film directors, politics, law, culture, and contemporary technology will lag behind the pace of developmental change unless modifications are made across the entire set's compass at least once a year. Prospective purchasers should monitor *Britannica* to see how capably the editors can cope with shifts in fashion, facts, interpretations, and technology.

Quality. The articles in the Micropaedia contain typically from 100 to 150 words, while those in the Macropaedia may run over 8,000, with biographies starting at about 1,500. A majority of Macropaedia articles examined won accolades from the panelists for their thoroughness, intelligent presentation, usefulness for the capable enquirer, and freedom from simplistic statements. The *Chinese Cultural Revolution*, *Continental Drift*, *Western Drama*, the history of jazz, telescopes, the *Reformation*, *Ancient Rome*, biographical subjects, and physical-economic geography of foreign countries are consistent in their excellence. Even in *Bowling*, the coverage is full. As in other *Britannica* articles, the writer presupposes basic knowledge of the game since there are no illustrations and such fundamental facts as the existence of drilled holes in bowling balls for finger holds are omitted. However, granted the absence of basics for the beginner, the remainder of the discussion is richly satisfying. Measurements are given in metric and English systems, there are cross-references to where bowling records are cited, and quotations from Henry the Eighth's edict banning the sport are included. Bowls, skittles, ten-pin bowling, even Boue, are encompassed in the one article. In other areas, this same pattern prevails. Articles like *Gregorian modes*, *Romanticism in Music*, *Jung*, and *Monetary Theories* provide nourishment for the mind not present in other sets. The only dissatisfaction noted by panelists resulted from the injection of too much subjective interpretation into an article (e.g., the earlier noted Isaac Newton biography that unduly stresses Freudian analysis). Also, too much credit is given to Galileo for his contribution to the Laws of Motion. The *Shorthand* article leaves out Gregg and Pitman revisions, and the *Typewriter* article is historical and of little value for the individual who would like to learn more about machine operations. Anyone unfamiliar with business practices would have difficulty understanding the article. The treatment of *Punctuation* is completely historical, again, not useful to the person wanting to know how to punctuate. No punctuation marks are illustrated. However, for most subjects the amount and worth of information contained in the set is not matched in any other encyclopedia. Those seeking fast food for the mind will be frustrated by the articles in the Macropaedia. For these persons the 102,000 Micropaedia articles will be more beneficial. Typical of the stored wealth of minutiae are articles on the bedaja (Javanese court dance), Markovnikov rule (organic chemistry expression), Ungava Bay, lit de justice (legal term), Kama and Vamana (figures in Indian mythology), and various kinds of wave (standing, transverse, longitudinal, seismic, elastic, lee, and shear). Most of these subjects achieve article status only in *Britannica*. Occasionally, when broader or more complicated topics (e.g., injunction, unidentified flying object, unguilate, or bed) have been reduced to Micropaedia dimensions, they seem shallow or incomplete in comparison with their

counterparts in some of the other group five sets. Apparently *Britannica's* tripartite design best accommodates users whose interests lie in philosophy, the arts, religion, and history.

Style. The language employed by *Britannica* is that of the well-schooled adult. Much of the writing in the Macropaedia is overly technical except for the graduate student or specialist. The mathematical aspects of physical theories, pleuronectiformes, thermodynamics, Fourier and vector analysis, and much of the text in the life and physical sciences and linguistics are phrased in a scholarly vocabulary. There is imprecise language in a few of the more technical articles, and sometimes an unnecessarily complex exposition occurs. Certain physical concepts, phenomena, and mathematical theories are more succinctly and precisely explained in such sources as the James and James *Mathematics Dictionary* and McGraw-Hill *Encyclopedia of Science and Technology*. Nevertheless, most articles in the arts, literature, history, the social sciences, geography, and biography are clearly articulated. In the schools, the Macropaedia will be accessible only to aspiring honors students in the eleventh grade or beyond. Lower-level secondary students may only be able to derive benefit from the Micropaedia because of the discomfort and hardship they will encounter as they strive to decipher the language in the Macropaedia.

Bibliographies. Appended to most of the articles in the Macropaedia are bibliographies, which are notable for their balance, quality, and currency. Items are generally annotated with trenchant and helpful statements that often place the suggested sources in context of the field. Exemplifying the *Britannica's* success in this area are the bibliographies accompanying *Motion Pictures*, *Art of* and *Motion Pictures*, *History of*. Each of these discussions has its own bibliographic essay and, although there is some duplication of basic texts on the history of cinema, the bibliographies taken as a whole impressively cover the art of movie making. Even if the same works are cited, the annotators may disagree as to their worth, i.e., Arthur Knight's *The Liveliest Art* (1957) is praised by contributor Ralph Stephenson for its readability and perceptive comment but criticized by Gerlad Mast for its datedness and lack of perspective. Except in those cases where foreign subjects (e.g., *Cardinal de Richelieu*, *Machiavelli*, *Rio de Janeiro* [city and state], and *Leningrad*) are treated by writers of the same nationality, the great majority of items cited are in English. For *Rome* and *Shostakovich*, most of the sources are English; for Prokofiev and Kiev, Russian citations predominate. Although most substantive articles include bibliographies, there are a few disappointing omissions. The Charlie Chaplin article is accompanied by a bibliography, but articles on Orson Welles, John Ford, and Greta Garbo are not. Nor is there a bibliography for Charles Ives or for Tennessee Williams. These are the exceptions, however, to the generally gratifying abundance of listings.

Illustrations. None of the four sets in group five is entirely satisfying in the quality of graphics. No more than five percent of *Americana's* illustrations are in full color, *Collier's* colorplates are not integrated into the body of the set, and *Chambers's* with its 5,000 mostly black-and-white illustrations (about 7 percent color) is pictorially backward in comparison with the American sets. *Britannica* ranks third among all 22 encyclopedias in total number of illustrations, being surpassed only by *Compton's* and *World Book*, which, being directed to a younger audience, place more stress upon visual expositions. *Britannica* has no illustrations in the Propaedia; two-thirds of the illustrations are in the Micropaedia, the remaining third in the Macropaedia. About 40 percent of the Micropaedia graphics are in full color; the remainder are black-and-white photographs, diagrams, and maps, and about half of these are portraits of biographees. Most of the illustrations in the Micropaedia are small, two or three inches square, but clearly reproduced. Colors generally are close to original values. The Macropaedia is less adequately illustrated with most articles being exclusively

textual. The notable exceptions are the massive spreads that accompany statements dealing with the visual arts, e.g., *Western Visual Arts*; *East Asian Visual Arts*; *Arts of the South Asian Peoples*; *Africa, Peoples, Cultures, Arts* in which expressive and informative full-color reproductions are copiously used. Similarly, black-and-white photographs are adeptly employed for such articles as *Theatres and Stages*, which includes sketches and photographs and a good chart to show the form of the theatre as it evolved through the ages. Another point in *Britannica's* favor is the recency of political maps for the Near East, Indian subcontinent, and Africa. A final pleasing feature is the high frequency of black-and-white illustrations for biographees. Most of these are effective, and some convey a perspective not usually available in an encyclopedia. For example, Mary Queen of Scots is depicted in a drawing done in 1559 when she was an attractive 17, a pleasing change of pace from the standard portrait painted when she was 35. Especially effective are the portraits of Thomas Edison (a Mathew Brady study of him as a young man), Akira Kurosawa (because he is so seldom photographed), and Orson Welles, shown as a character in *A Crack in the Mirror* instead of as the young citizen Kane (the pose used in most of the other sets).

Unfortunately, there are many unsatisfactory illustrations in *Britannica*. The one for Henrik Ibsen is a dim copy of a lithograph, and the Kabuki Theatre pictures are overly reduced so that detail is obscured. The illustrations for *Shorthand* are plentiful and do demonstrate the differences between systems, but they do not assist comprehension of the systems. Likewise, the *Ballet* illustrations present only scenes; there are no diagrams of techniques or positions. The illustrations for *Telescope* are not as informative as the text, and there are no clear diagrams of reflecting and refracting scopes. In general, the graphics in *Britannica* inspire more than they instruct.

Physical Format. *Britannica's* binding is in a tasteful, rich, mahogany brown leather. Spine lettering is in gold with a section of the lower spine appearing in three different subdued colors, black for the Propaedia volume, blue for the Micropaedia units, and magenta for the Macropaedia portion of the set. Paper quality is thin but opaque with no distracting print-through. Page formats are handsome. Guide words appear at the top of each page. Besides headings and subheadings within the larger articles in the Macropaedia, there are very helpful marginal notes that draw attention to important points in the coverage, e.g., "Early pin games" in the *Bowling* article and "Bengali and Hindi devotional texts" and "Vocalizations of rails" in *Hindu Sacred Literature* and *Gruiformes*. The type has a dignity consistent with the generally elegant appearance of the set.

Special Attributes. Foremost is the tripartite (Pro-Micro-Macropaedia) design, a courageous attempt to accommodate both the seeker of specific bits of information and the person who desires an in-depth tour through a subject and exposure to its roots, contexts, and precedents. In addition, *Britannica* is exceptional because of the breadth of attention it bestows upon Asian and African cultures, the world's various philosophical systems, religions, and the physical-economic geography of the Soviet Union and Asia. (Feb. 1, 1979, p. 889)

New standard encyclopedia.

14v. Chicago, Standard Educational Corporation, 1975—illus. maps. tables. plates. 24cm. Lexatone to homes, \$269.50; to schools and libraries, 20 percent discount if ordered direct from publisher.

Authority. Most articles in the *New Standard Encyclopedia* are prepared by its editorial staff. A small number are written by outside contributors. Douglas Downey, editor-in-chief, and Harry Bricker, educational editor, are assisted by a five-member editorial board. Thirty-eight authenticators and advisors, all associated with colleges and universities, work in conjunction

with a group of more than 600 institutional and individual contributors, consultants, and authenticators. An examination of the list revealed a disproportionately large number of individuals associated with manufacturing firms and national organizations, such as the Licensed Beverage Industries, Inc., Open Die Forging Institute, Inc., Sherwin-Williams Company, National Association of Hosiery Manufacturers, etc. Also on the list are noted academicians Louis Leakey, Mario Pei, William T. Stafford, and Elizabeth B. Hurlock. There does appear to be a difference in tone and substance between articles contributed by independent authors and those prepared by industry officials.

Arrangement. No index is provided for *New Standard*. Instead, the main alphabet contains among the articles about 12,500 *see* entries, compiled and maintained on indexing principles. There are an additional 40,000 *see also* and *for further information*, *see* references scattered throughout the set. Despite the lack of an index, the panel found the many cross-references to be almost an adequate substitute, with a remarkably small incidence of "buried" information to be found. One problem caused by the plethora of small specific articles and *see* references is, of course, fragmentation; the many cross-references produce an interruption in the flow of the text of some articles.

Subject Coverage. Social concerns (e.g., recycling, terrorism, land use), contemporary writers, minority biography, political figures and events in the United States and abroad, popular culture, and technology receive the most attention in *New Standard*. Scientific theories and biography are not as fastidiously or comprehensively treated as in other sets directed to the same age group. For example, the topics enzymes, Darwin, Sherrington, schizophrenia, and ESP are sketchily handled or merely mentioned in passing. Basic science and uncomplicated issues are adequately covered; sophisticated concepts and topics sometimes fail to catch the central focus of the subject. Directness and clarity are won at the expense of proper explanation of the subject. In political and historical areas, however, utilization of space is often effective. Such topics as executive privilege, Benedict Arnold, the Battle of Saratoga, women's rights, and the Panama Canal are concise in treatment but certainly adequate.

Accuracy. Within the areas of history and science and technology, *New Standard* provides accurate coverage. The articles *Television*, *Biofeedback*, *Industrial Revolution*, *Chemistry*, *Amtrak*, *Pulsar*, *Food and Nutrition*, *Aztecs*, *Cystic Fibrosis*, and *Matter* are up to date and error free. This is true of most of the articles that treat unambiguous and concrete topics. Even so, occasional incorrect figures and interpretations were noted. The article on Edmund Burke speaks of his capability as an orator but neglects his pioneering statements on representative rule in democratic government and the exercise and preservation of personal rights. Without this kind of perspective, the article is almost pointless. In the article *Mexico*, the Parícutin volcano's height is given as 7,451 feet instead of the generally cited figure of 9,100 feet. The Valley of Kings is credited with more than 40 tombs, but the correct number is in excess of 60. In *Pankhurst*, *Emmeline* there is the concluding observation that "in 1918, Britain gave women the vote," when in fact, full suffrage was not gained until the Representation of the People Act of 1928 was passed. In 1918, only women over 30 who held property won the right to vote. Despite these lapses, *New Standard's* editors have maintained a high level of accuracy in the encyclopedia.

Objectivity. In its treatment of women's rights, American politics, and differing points of view in artistic taste, *New Standard* has maintained an objective stance. In its attitude towards communism, however, it takes a hard-line position, which permeates the articles relating to communism. In *Communism*, life in the United States is contrasted favorably with that in the Soviet Union, with no recognition of the advancement of the

Russian standard of living. While the Communists' insidious methods of political takeover (subversion, violence, etc.) are mentioned, the social injustices that set the stage for this activity are not covered. In *Chile*, there is the simplistic statement that "under junta rule, order and economic stability were gradually restored." The same conservative tone can be found in articles on twentieth-century Russian figures. The Shostakovich article, for example, places this composer's Symphony No. 4 in a prominent position, characterizing it as "marked by lyrical melodies, dissonance, and great dramatic power." Later, the article points out that the symphony, condemned as "too modern," was withheld from performance for 26 years. With his Symphony No. 5 (1937), however, he "regained favor." The article expends too much space on political factors and implies without sufficient justification that the Fourth Symphony is stronger than the masterful Fifth.

More anti-Communist editorializing appears in the Pavlov article. One reads that "Pavlov was not a Communist, but Russians regarded his work with the conditioned reflex as supportive of Marxist ideology." There is no documentation presented for Pavlov's not being a Communist; so the statement appears to be an attempt to scotch a rumor. Evidence from both sides is necessary to substantiate such a statement.

Recency. Currency in *New Standard* is generally beyond cavil. There is clear evidence that an efficient, continuous revision program, giving priority to topics susceptible to fast obsolescence, has been maintained. Census data, emergent or newly prominent subjects such as acupuncture or exorcism, capital punishment, Amtrak, African literature, mass transit, and the Wankel engine have been updated. Musical performers formerly omitted, such as George Shearing, Georg Solti, and the Beatles, have been given articles. *New Standard's* biographical coverage does retain some imbalances, however. Esaias Tegnér, the Swedish poet, the Damrosch family, Dudley Buck, Genevieve Taggard, and lesser creative luminaries are retained, as are Alexandr Kolchak, anti-Bolshevik organizer, and Bernard Kroger, founder of the food store chain. Yet such major figures as Gene Krupa, Stanley Kubrick, Sandy Koufax, and Luigi Dallapiccola are not yet represented. *Latin America* leaves out important twentieth-century Mexican writers such as Jaime Torres Bodet and Carlos Fuentes. Despite these and other instances of staleness, the editors have managed to keep up with major changes, events, and technological breakthroughs and with the ongoing interests of the average American.

Quality. *New Standard* devotes more than 40 percent of its space to biographies. The average biography is only about 150 words long. Because of judicious editing, most of these compact descriptions effectively summarize the character and contributions of the biographee. Ezra Pound, Walter Gieseking, Samuel Johnson, Benedict Arnold, Diego Rivera, and Leo Tolstoy all receive accurate, often anecdotal, and well-balanced portraits. At times, however, brevity means oversimplification, as in the aforementioned Burke biography and those of Juarez and Pancho Villa.

Articles dealing with subjects are distributed in a pattern common to encyclopedias aimed at intermediate grades and older readers. States and major countries, horses and dogs, and American history are allocated ample space, for example. Once in a while, as in the article *Home Rule*, conciseness is not successfully achieved. Here insufficient explanation is given for the historical origins of home rule. Indeed, half the space is devoted to a description of Irish home rule.

Style. *New Standard's* style and vocabulary are clear. Terms considered unfamiliar to the reader are italicized and defined in the text. At times, the writing is prosaic, with definitions so prevalent that the reader may be deterred instead of encouraged. For example, the article *Memory* consists almost entirely of definitions, 16 altogether. The text would not fire a child's imagination, and the examples are redundant. The mem-

ory of being frightened by a dog is noted twice to illustrate consecutively the emotional effects of memory and unconscious memory. Similarly, *Volcano*, an accurate and complete article, lacks drama and is difficult to absorb because it is interrupted by definitions, 20 within its two pages of text.

Bibliographies. More than 900 bibliographies are appended to articles. Typically, between four and six titles are cited. Bibliographies were provided for all of the major articles examined by the panel and were judged comparatively current, appropriate for the set's audience, and fairly free of biased, inaccurate, or overly pedantic works. For some articles, national associations are also suggested as sources for more information. Many major articles, e.g., *Trees*, *United States Constitution*, *Mark Twain*, *Immigration*, *Ireland*, *Motion Pictures*, *Mathematics*, and *Music*, have two-part listings, one for older and another for younger readers.

Illustrations. Of the 12,100 illustrations in *New Standard*, 1,700 or about 14 percent are in full color. Although in both total number and the richness of graphics *New Standard* does not compete with several other encyclopedias in group two, its editors appear to understand the functional value of illustrations and their placement. Within the past decade, there has been clearcut improvement in quality and usefulness. For example, the article *Statistics* now incorporates effective illustrations for normal and skewed distributions, histograms, and frequency polygrams; *Supreme Court* includes a table of landmark decisions; *Stonehenge* is now accompanied by a photograph of the actual ruin instead of a model replica and *Steam Engine* by a clear diagram of the Newcomen Atmospheric Steam Engine.

Subjects less familiar to today's readers are given priority. For example, in the *K* volume, *New Standard* includes portraits for Lord Kitchener, Fritz Kreisler, Krupp von Bohlen, Marshal Ivan S. Konev, and Henry Kaiser. Illustrations are excluded for Rockwell Kent, Kenyatta, Billie Jean King, Kosygin, and Grace Kelly. Illustrations for other articles have been well selected. For example, there is a full-page photograph of the Rosetta Stone on the page opposite the article. A caption gives the scale and number of lines in each script. *Archaeology* contains a helpful illustration showing the work of archaeologists under water. In this instance the absence of an index to the set is regrettable, because one could not locate the picture of underwater archeology without knowing that it appears under archaeology. Geographical articles are generally well supplied with illustrations and those on individual artists are often accompanied by color reproductions (e.g., Hogarth, Holbein, Tintoretto, Titian). Unfortunately, some of the color in these reproductions is poor. Also, portraits of living persons are sometimes out of date. The engraving of Bedlam in the article *Schizophrenia* is distinct but rather dark, as are some of the other illustrations in the set. More important, Bedlam actually looks very pleasant, with patients obviously well kept and appearing deceptively normal.

Physical Format. Stoutly bound in cardinal red simulated leather with spine letters and numbers in gold on black panels, this is an eye-catching set. Its volumes lie flat after use. The paper is not completely opaque, and page layouts are cramped because of insufficient white space, but the typeface is clear and legible. The inner margins are too narrow and illustrations bleed to the edge of the page.

Special Attributes. None. (Dec. 15, 1978, p. 712)

Oxford junior encyclopaedia.

13v. London, New York, Oxford, 1974. illus. maps. plates. tables. 25cm. cloth \$172.

Authority. Ever since *Oxford Junior* was first published (1948) it has been a popular children's set in the United Kingdom. The edition examined was produced between 1960 and 1965 with revisions occurring through 1974. Each volume has its own editor, principal contributors, and "other" contributors. Laura

E. Salt and Geoffrey Bounphrey are general editors for volumes 1-3; Laura E. Salt and Robert Sinclair share the general editorship for volumes 4-13. Helen Mary Petter is illustrations editor for the complete set. All four are experienced and accomplished professionals, and they have enlisted the support of others well known in the United Kingdom if not internationally prominent. Contributors are drawn from British academic circles (Oxford University, Cambridge University, University of Birmingham, and so on) and several of the volume editors (e.g., Daryll Forde and Cecil Day Lewis) are eminent scholars. Among contributors are the late Jacob Bronowski, J. A. W. Bennett, Christina Hole, and others well known in the international cultural and scientific milieu. Articles are not signed.

Arrangement. Unlike the other multivolume sets examined, *Oxford Junior* is organized by topic. The main body of the work consists of 12 volumes, each treating subjects relating to a central unifying theme. *Mankind*, *Natural History*, *The Universe*, *Communications*, *Great Lives*, *Farming and Fisheries*, *Industry and Commerce*, *Engineering*, *Recreations*, *Law and Order*, *The Home*, and *The Arts* are the titles of the separate volumes. Volume 13 is in two parts: the first contains charts, maps, tables, and lists associated with the topics in the set proper; the second is the general Index. Each volume is arranged alphabetically letter by letter with cross-references linking related articles. Of course, accessibility is conditioned by this set's topical arrangement. *Pets* are in the recreations volume, *Beasts* in volume 2 (*Natural History*), and domestic animals appear in *Farming and Fisheries*. Thus, the reader is more than ordinarily dependent upon the Index and cross-references for proper guidance. American children not familiar with the thematic approach can operate more efficiently within an A-Z alphabetical spread of articles. Research has confirmed that an alphabetical arrangement saves a researcher's time because significant topics are found more quickly. Fortunately, the Index and cross-references throughout the set are extremely reliable, no errors or blind entries being noted.

Subject Coverage. *Oxford Junior* displays a notable British bias in its subject coverage. For example, Herbert Hoover, Theodore Roosevelt, and many other American presidents are not mentioned in *Oxford*. Individual U.S. states are not subjects of articles. Neither are Dallas, Seattle, St. Louis, and Detroit. However, *Hobart* (capital of Tasmania), *Bristol*, and *Turkmenistan* (a Soviet Socialist Republic) all have separate articles in the *Universe* volume. *American Football* and *Baseball* consist of two-page treatments, while *Cricket* consumes over 12 pages. Lawn tennis, fox hunting, and bear baiting get more attention than ice hockey and bowling. *Parliament*, the *Royal Household*, *Royal Navy*, and *RAF* are given more space than the *American Civil War* (a half-page article). In the *Great Lives* volume, one finds articles on William Morris, Metternich, Dame Nellie Melba, Andre Massena, and Samuel Marsden, figures not included in most American sets written for young children. On the other hand, Horace Mann, Mao Tse-tung, Cyrus McCormick, and Douglas MacArthur are omitted.

In general, the panel of reviewers noted that about 60 percent of the biographees and 40 percent of the topics they looked for could not be found in *Oxford Junior*, even as incidentally mentioned subjects. The emphasis is on English and Continental cultural and political figures. The subject distribution within this encyclopedia favors the proven and elegant in art, music, and literature, the academically respectable over the popular and current elements found in American encyclopedias. Social problems, American politics, popular music, contemporary biography, space sciences, and American sports are not adequately represented. But the fine and applied arts, physical and cultural anthropology, technology (*Belt and Chain Drive*, *Aeronautical Engineering*, *Concrete Construction*, for example), and natural history are provided with gratifyingly thorough articles.

Accuracy. The accuracy of information in *Oxford Junior* is impressive, particularly in historical articles. The only justifiable cavils are two: first, that editorial attention has been lavished more on English and European topics than those of the U.S. or underdeveloped regions of the world; second, that the coverage varies in currency from volume to volume depending upon its place in the revision cycle. And obsolete information tends to become rapidly invalid in the social sciences. Statements on American blacks, women, and U.S. politics are dated. Also, the statement that Mayan civilization vanished in the mid-sixteenth century is not entirely accurate. In modern times, approximately two million Mayans live in Guatemala and North Yucatan, and though their life-style has been impoverished, the race still continues. Although the scientific articles are meticulously written, occasionally circular language results in unacceptable statements, such as the one explaining that cetacea "have become fish-shaped because this is the best shape for an animal that spends its life in the water."

Objectivity. The outlook of this set is British. The panel found little American history. Women's suffrage, excellent as far as it goes, is mentioned only in the British context. Most of the article *Canals* is on English waterways, while *Underground Railway* deals mostly with British subways; the only illustration is of the London underground. Trade unions are treated with the same national emphasis. The pictorial material for dams shows examples in Wales, Italy, Tunisia, France, Scotland, and Rhodesia. No American dams appear. The expression of editorial opinion intrudes more often than in the typical American encyclopedia. For example, in the discussion of the quality of American education, the encyclopedia says that "the average standard of intellectual attainment is a good deal higher among English children when they leave Grammar School than among American children when they 'graduate' from High School." To the encyclopedia's favor, religious, political, and ethnic biases are absent. The Church of England, Jews and Judaism, the Roman Catholic Church, Zoroastrianism, and other minor and major religious subjects are objectively and astutely handled. However, many subjects of current concern in the U.S. are omitted. Abortion, drug abuse, poverty, juvenile delinquency, and political issues, such as invasion of privacy, public financing of elections, and dwindling energy resources, are among neglected topics. Avoidance of controversial subjects, occasional editorializing, and judgments that, though appropriate a decade ago, now clash with current thinking will make *Oxford Junior* too subjective and insular for many U.S. readers.

Recency. The panel found that science and technology, communications, and law topics are reasonably up-to-date in *Oxford Junior*. Many well-known persons (e.g., Golda Meir, Richard Nixon, Leonard Bernstein, Alexander Solzhenitsyn) do not appear. The *Great Lives* volume contains only persons who are deceased. This emphasis on the past was considered by the panel to be unfortunate in an encyclopedia aimed at young children.

Some examples of dated material in national coverages were also found. For example, in volume 3 (*Universe*) Mexico is correctly listed as having 29 states, but in volume 1 (*Mankind*) only 28 are cited. Rivera (died 1957) and Orozco (died 1949) are referred to as ranking "among the greatest of living artists." Social issues important on this side of the Atlantic are also slighted. The panel found little on family welfare and nothing on abortion and contraception. The article *Whales* makes no mention of their being an endangered species. The panel concluded that *Oxford Junior* would not be competitive with U.S. encyclopedias on the basis of currency of information.

Quality. Although articles in *Oxford Junior* occasionally contain complex technical information (e.g., chromatic and spherical aberrations of lenses or the Kaldo and Rotor processes used in steelmaking) they are not always thorough. For example, the article *Enzymes* does not explain the chemical action of en-

zymes, fails to refer to the lock and key theory, and never mentions the phenomenon of catalysis. In *Memory* the writer illogically switches from an explanation of trace-theories to a reference to a "Professor Bartlett" whose identity and works are never divulged. Schizophrenia and extrasensory perception, both of which merit main articles, are respectively subsumed under the articles *Mental and Nervous Disorders* and *Telepathy*, the first article being in the *Home and Health* volume, the second in the *Communications* volume. The discussions of music, art, and literature lack the specifics on people, works, movements, and contemporary developments, which usually are found in American sets. *Oxford Junior's* articles are best when historical, technical, or traditional conceptual subjects are being considered, e.g., *Greek and Gothic Art*, *Coal-Mining*, and *Hinduism*. Science articles are generally concise, reliable, and effectively structured. Additionally, the panel noted that such major biographical figures as Sir Francis Bacon, Charles Darwin, Sir Isaac Newton, and Sir Walter Scott are given comparatively full biographies, marred only by an occasional tendency of authors to speculate about their characters or motives.

Style. The writing in *Oxford Junior* achieves a high standard, but the vocabulary is not controlled; thus passages often exceed the capacity of elementary school children. Indeed the vocabulary is at times unusually mature, presenting to the young reader such words as *guile*, *impregnable*, *indigenous*, *accede*, and *rapacity*. Terms requiring clarification or definition are seldom italicized and explained. Spellings and usage are British, hence one finds *aluminium*, *programme*, *motor-car*, and *gramophone* instead of their American equivalents. The British cast to *Oxford Junior's* style probably accounts as much as anything for its lack of favor in this country.

Bibliographies. None.

Illustrations. There are more than 2,400 illustrations in *Oxford Junior*, but only 96 are in full color, fewer than in any other group one set. There are eight full-color illustrations in each volume, chosen to coordinate with its theme rather than to tie in to specific text. The article *Mexico* for example contains only five black-and-white photographs, a rather meager offering. In general, however, maps, graphs, and pictorial illustrations are tasteful, pertinent, and usually conveniently placed. There are instances where graphics are used to advantage. Examples are *Rosetta Stone*, *Incas*, *Egyptian Civilization*, and *Aztecs*, which are accompanied by conveniently situated and effectively captioned pictures of artifacts and ruins.

Physical Format. *Oxford Junior* is in a substantial cloth binding flexible enough to permit the open volume to lie flat after it has been broken in. The gold lettering on the spine is elegant but not easily legible from a distance. High quality, semigloss, heavy-weight paper is used in the set. The typography and layout are pleasing to the eye and assist quick access to content.

Special Attributes. Peculiar to *Oxford Junior* is its topical arrangement. Another unique feature is the series of charts and historical sketch-maps (e.g., the Mongol Empire, The Empire of Charles V) contained in the Index and Ready Reference volume. Most useful for an American audience are the historical charts and guide to the main characters and places in Greek and Roman mythologies and in the Bible. (Dec. 1, 1978, p. 639)

The volume library.

Nashville, Tenn., Southwestern Company, 1974. xii, 2,597p. illus. maps. 29cm. cloth \$55.95.

Authority. Among the 244 contributors to the *Volume Library*, more than 65 work or have worked for industry. Notable contributors include Henry Steele Commager, the historian. Willy Ley and Everett M. Dirksen are two of the nine persons listed who are deceased. Librarians included are Frederick Kilgour and Frances Jenkins. Wilbur Zelinsky, the geographer; Julius Hlavaty, former president of the National Council of the Teachers of Mathematics; Ernest Van den Haag; Fred Hechinger; Stuart

Udall; and Dan Lacy are also on the roster. About 70 percent of the articles examined were signed.

Arrangement. This work is arranged in 25 broad topical chapters called "volumes." Their titles range from "Animals," "Arts," "Biography," and "Careers" to "Recreation," "Sciences," "Social Sciences," "United States," and "World." Volumes 26 and 27 are an atlas and index respectively. The volumes are further divided into subtopics, so that homemaking, furniture, interior decoration, and etiquette are within "Homemaking," for example, and anthropology, sociology, psychology, and psychiatry make up the volume on "Social Science." This dispersion of subject matter makes it difficult to locate specific coverage. For example, information about Zoroaster-Zarathustra is spread out among the "Biography," "History," "Literature," and "Religion" volumes, while information on pollution can be found in six volumes: "Geography," "Health," "Industry and Technology," "Earth Sciences," "United States," and "Science."

Unfortunately, the volumes sometimes rupture standard disciplinary groupings. The social sciences in the "Social Science" volume, for example, exclude political science, economics, geography, and history. The latter three have their own separate volumes, but political science is only mentioned in passing as a career possibility at the conclusion of the "Social Science" volume.

The index and table of contents seem adequate, though both have errors. For example, the table of contents indicated the presence of a nonexistent graded reading list, and a Gross National Product table cited in the index is not at its supposed location. Some of the entries located through the index are worthwhile; others will disappoint because of their brevity. Where appropriate, a glossary of terms can be found within each volume.

Subject Coverage. Miscellaneous subjects receive well over two-thirds of the coverage in *Volume Library*, biography less than 10 percent, and geography slightly more than a fifth of the total space. Industry and technology, mathematics, life sciences, and government and law are given the most attention, while anthropology, biographies, sociology, psychology and psychiatry, careers, and homemaking have not been provided with enough detail or current data. Fewer separate articles on prominent persons and specific topics are found here than in the other group three encyclopedias.

Generally only one in five subjects sought by the panel was located; likewise only about 60 percent of the biographees were found. In the latter case, the brief synopses of lives—usually less than 100 words in length—insufficiently develop the ideas that the individuals represent. The apportionment of space also seems illogical. For example, John Volpe, former governor of Massachusetts, has more coverage than Count Alessandro Volta, Emily Post more than Max Planck. Within mathematics, number theory is totally neglected, and the discussion of psychology omits any coverage of the continuing debate over the relative effect of heredity and environment upon human intelligence. Representation of the total realm of knowledge is uneven and not as compatible with the usual concerns of readers as that found in competing encyclopedias.

Accuracy. Numerous errors have been found in this encyclopedia. For example, geological era dates are not consistent with periods cited elsewhere. Mesons, contrary to the text, do not always have a mass that "lies between that of the electron and that of the proton," and the valences given for molybdenum, neodymium, and nobelium are incomplete. The article discussing the atmosphere contains incorrect information, because it treats two layers as one and mislabels a region as an independent layer. The fifth layer of the atmosphere is excluded, and the accompanying diagram is inconsistent with the text. Within the "Literature" volume, there are plot summaries for Dostoevsky's *Brothers Karamazov*, *Crime and Punishment*,

Notes from the Underground, and *Idiot*. The first two novels are approximations of the story line that are correct as far as they go; the other two synopses are so wide of the mark that they distort the value of Dostoevsky's works. Imprinting, as described in *Ethology*, is defined incorrectly as the tendency of an animal to identify with the species. While the error rate seemed lowest in mathematics, biographies, agriculture, and geography, the number of inaccurate statements found elsewhere is beyond an acceptable level.

Objectivity. No examples of blatant bias were noted in *Volume Library*. Controversial figures, political theories, minorities, and women all appear to receive even-handed treatment. Issues of social moment, however, such as abortion, capital punishment, and the energy crisis, are bypassed or given only scant attention. Possibly because a quarter of the contributors to the encyclopedia are from corporate management (eight alone are or have been associated with General Electric), the problems occasioned by industrial waste receive minimal discussion. Stuart Udall's article on conservation reflects concern with environmental despoilment, but the definition of *conservation* in the glossary of government and legal terms ends with a description of the Civilian Conservation Corps. Fortunately, the contributors associated with business organizations generally provide articles on industry and technology, food and agriculture, science, economics, and business. The articles that cover such areas as radiation hazards or fertilizer are written by independent or university-connected experts on health or soil sciences. There is a noticeable difference in tone, however, between statements offered by the independent experts and those associated with industry.

Recency. Except for population statistics, information on the space program, and the bibliography for B. F. Skinner, the phraseology, facts, or interpretations in *Volume Library* seem extraordinarily dated. The article *Etiquette* contains advice that now conflicts with standard practice. The reader is informed, for example, that "a doctor (physician, surgeon, or dentist) and a judge are addressed by their titles, but in social life a woman who holds a Ph.D. or other academic degree is not addressed as 'Doctor,'" a practice surely not in keeping with today's egalitarian views.

Other dated articles include *Psychology*, *Banking*, and *Bangladesh*. Petroleum production figures are well over a decade old, and the copyright discussion excludes any mention of developments from 1909 until now. In the discussions of acoustics and sound, *cps* is used in lieu of the current designation of *Hz*. In the "Careers" volume, the prediction that "in the near future about 250,000 teachers will be required each year" rings hollow, as does the promise of a pending shortage of trained librarians.

Quality. Mathematics, the empirical sciences, the history of the U.S. government, health, and nutrition are covered with admirable detail. *Trigonometry* extends for nine pages that include modern developments. The amount of material constitutes almost a complete course of study. Boolean algebra is presented in a brief but well-fashioned statement, and figures such as Fibonacci and Wiener are presented adequately. The treatment of business and economics is thorough, despite the inadequate definitions of the technical terms that appear in the glossary.

Psychology includes a lengthy section on psychiatry with full descriptions of psychoanalytic techniques and short articles on Jung, Adler, Rank, and Harry Stack Sullivan, as well as a discussion of Freudian analysis. The nutrition article is replete with tables and illustrations that clarify and add to the effectiveness of the article. Geographical and biographical articles, however, are generally too short, averaging well under 150 words. Cesare Beccaria, the noted criminologist and economist, is underplayed in one sentence. Euler's article dwells upon his peregrinations and associations without homing in on his specific con-

tributions to the science of mathematics. The fifth postulate is not mentioned in the article on Euclid, and, although he did found a school in Alexandria, it is generally assumed that he did not teach there. Similar slighting of significant factors in the lives of Piaget, Binet, and Freud were noted. Totem pole is dealt with more as a popularized term, with little discussion on its anthropological meaning. The coverage of American music stops at about 1955 with Marc Blitzstein, now considered passé, referred to as a revolutionary composer; no figure born later than 1923 is listed among the modernists. Thus, in the subject treatments, viewed as a totality, the *Volume Library* does not offer sufficient depth to satisfy an uninformed beginner.

Style. The language of *Volume Library* is uneven in quality. The definitions of *totemism* ("the identification of cosmic power with the power of the group") and *Phyllite* ("a clayey metamorphic rock with cleavage coarser than slate and finer than schist") illustrate this. There are plentiful instances where the language roams beyond that which is understandable to the typical high school student. While the writing in science and mathematics is uncompromisingly adult, other sections employ expository techniques, such as rhetorical questions, that are more appropriate for the textbook than for an encyclopedia. The tone of some statements seems extraordinarily flat. Consider the following advice for the new bride: "When the bride goes upstairs to change to her traveling clothes, the bridesmaids gather at the foot of the stairs so as to catch her bouquet, which she tosses to them when she has nearly reached the top, repeating the rhyme: Hail there, pretty maidens, Standing all-arow! The one who catches this, The next bouquet shall throw."

Bibliographies. At the end of many of the chapters and main sections of *Volume Library* are bibliographies, ranging from five or six items to about 150 titles for the "Arts" and "History" volumes. The majority of citations are post-1950 with a cutoff date in most cases of 1964. Although the "Economics" listing includes major modern and historical works by Adam Smith, Galbraith, and others, works by Heilbroner and Friedman and contemporary works by Samuelson are omitted. Bibliographic currency in other areas is also uneven; the latest item in the "Psychology and Psychiatry" volume is a 1968 work by Robert I. Watson, while the biography for B. F. Skinner includes a reference to his *Beyond Freedom and Dignity*, published in 1971. Piaget and Freud are given abbreviated, old, and poorly selected titles. The bibliography for Freud, for instance, misses the classic study by Ernest Jones. The other subject areas have similarly deficient bibliographies with the exception of *Astronautics*, which has more recent, if not the most lively, readings on the subject.

Illustrations. Of *Volume Library's* approximately 2,000 illustrations, about 5 percent are in full color. A few of them—those illustrating the optical illusions in the article *Perception*, for example—are successful. Also, some of the tables clarify and add to the effectiveness of the text. Unfortunately, many of the black-and-white photographs are overly dark. Pictures of living persons appear to have been taken during the 1950s, Mary McCarthy and Leonard Bernstein appearing, for example, to be in their thirties. Color photographs seem placed more on the basis of compulsion than logic. Tourist bureaus, Walt Disney Productions, and NASA are typical sources. Some illustrations of biographees are inconveniently placed. Voltaire's portrait, for example, is adjacent to a paragraph merely enumerating his name as a participant in the Enlightenment. One would expect this illustration to accompany his biography, which is more than a thousand pages away. The "Atlas" volume contains adequate maps prepared by Rand McNally.

Physical Format. *Volume Library* is bound in sturdy, simulated, dark brown leather covers and is thumb-indexed so that the reader can quickly locate "volume" sections. The open pages lie flat, and paper quality, page format, and type style are all adequate. Inner margins are too narrow to permit rebinding,

and some of the illustrations bleed into the gutter. It appears that compactness of format has been achieved without unduly compromising production values.

Special Attributes. Like the *Lincoln Library, Volume Library's* most unusual feature is its arrangement by broad subject instead of the more normal alphabetical sequence found in most encyclopedias. (Jan. 1, 1979, p. 771)

The world book encyclopedia.

22v. Chicago, World Book-Childcraft International, 1975—. illus. maps. tables. diagrs. 25cm. To parents and educators, classical \$469, renaissance \$399; to schools and libraries, renaissance \$299.25.

Authority. Among the 3,108 contributors and consultants whose names appear at the end of *The World Book Encyclopedia* is a larger percentage of prominent persons in the sciences and arts than among the contributors to any other encyclopedia examined by the panel. Isaac Asimov, Kenneth Boulding, Kenneth E. Clark, Padraic Colum, René Dubos, Harry F. Harlow, Thor Heyerdahl, Irving Kolodin, William C. Menninger, Samuel Eliot Morison, Allan Nevins, Jacques Piccard, Eric Sevareid, and Byron R. White are notables picked at random from this list. Signers of articles either wrote or vouched for the accuracy of article's content. In the field of psychology the biographies of Binet, John Watson, and Edward Thorndike are signed by B. F. Skinner; those of Jung, Wundt, Ebbinghaus, Koffka, Köhler, Harvey Carr, and L. L. Thurstone were prepared or checked for accuracy by Kenneth E. Clark. The article *Autism* is contributed by Bernard Rimland, an authority on infantile autism. The article *Thomas Paine* is by Merle Curti, the historian of American thought and culture, while *Woodrow Wilson* is signed by Arthur S. Link, the noted Wilson scholar. *Stephen Foster* is signed by Gilbert Chase, historian of American music, and *Poverty* by Lawrence Senesh, eminent writer of curricular materials on economics for the elementary schools. Almost every article in *World Book* is signed. Exceptions include brief definitions for subjects such as *Bristlecone Pine*, *Pneumatics*, *Scherzo*, and *Hominy*. The set's authority is peerless.

Arrangement. The organization of *World Book* is quite effective. At the end of articles on large-scale subjects a network of related articles appears. *Fallout*, *Soot*, *Sound (Noise)*, and *DDT* (all smaller articles), for example, are among the 24 other articles suggested for the reader who begins with *Environmental Pollution*. A Reading and Study Guide on the subject provides additional assistance. Sufficient cross-references and distinctive headings, subheadings, and guide words at the tops of pages further ease the path to needed information.

The Index, first produced in 1972 and continually updated, is extraordinary in its efficiency, analysis of topics, and clarity. For such general terms as *Line*, there are identifiers in brackets, so that the searcher knows whether a bowling, fiber, fishing, journalism, mathematical, or art line is being referenced. References to illustrations and maps are integrated. The only error found in cross-references occurred at the conclusion of the article *Teeth*, where there is a reference to a nonexistent picture of an abscess. Otherwise, the indexing and ancillary finding devices were found by the panel to be models of excellence.

Subject Coverage. Space in the *World Book* has been allocated on the basis of importance, impact, and attractiveness from a child's point of view. Geography and social sciences coverage is exceptionally strong and relates well to curricular trends in the public schools. Business is more elaborately handled here than in any other group two set. There are separate articles for Wall Street, gross national product, Dow Jones average, inflation and deflation, mercantilism, Henry Ford II, and Nobel Prize-winner Milton Friedman. Government, energy, civics, criminology, canals, ecology, coal, and clothing are typical areas where *World Book* shows special strength. Psychology is similarly well

served. Nine of ten areas searched by the panel were found in the set; the nearest competitor contained only seven.

The panelists were unanimous in their opinion that it was easier to gain a full perspective on a subject within *World Book* than in other group two sets.

Accuracy. *World Book* is remarkably reliable. An examination of figures, dates, facts, and technical discussions in articles across subjects in the social sciences, arts, history, physics, biology, and literature uncovered few errors, a lower incidence than in any of the other group two sets. Among the few errors uncovered, the article on Konrad Lorenz states that he became codirector of the Max Planck Institute in 1950, when in fact he assumed this post in 1954. Also, Elizabeth Blackwell was born in Counterslip, not Bristol, and she emigrated to the U.S. in 1832, not a year earlier. Emma Goldman, the anarchist, was born in Kaunas, Lithuania, not in Russia, and there is no evidence that she "later came to oppose violence" as she was raising money for the Spanish Civil War at the time of her death. Aside from these, no other inaccuracies were noted by the panel.

Objectivity. The objectivity of *World Book* is consistently sustained; editorial judgments do not intrude. The article on the Incas, for example, neither praises nor condemns Pizarro. Only facts are stated here, whereas in other group two encyclopedias, negative judgments are rendered. Also, both sides of the extrasensory perception debate are characterized. Birth control and abortion receive full and open-minded coverage. The writer, Daniel Callahan, director of the Institute of Society, Ethics, and the Life Sciences, gives the subject of abortion a three-way (legal, medical, ethical) treatment not matched in any of the other group two encyclopedias. Protestant, Jewish, and right-to-life views are all represented. Homosexuality also receives even-handed coverage. Communism and socialism are given balanced representations. In the article *Chile*, Allende's nationalization of industry and land reform, his support among poor people, and the fact of his free election are mentioned. Ezra Pound, Mussolini, Richard the Third, Mary Queen of Scots, and other controversial or notorious figures are given objective portraits that do not linger over foibles.

One minor exception was noted by the panel. The article *Diego Rivera* commences with commentary on the painter's controversialism and communistic credo. This is a true observation, but, positioned at the threshold of the article, it thrusts a premature bias into the reader's mind. This is a minor exception counterbalanced by a wealth of cases where objectivity has been stringently maintained.

Recency. Recency is one of *World Book's* major assets. Statistics, technology, scientific breakthroughs, and major happenings are continuously surveyed and incorporated in annual revisions of the set. Its tone and inclusions of emergent figures in the major disciplines are constantly adjusted to mirror the contemporary scene. Population figures, the status of American railroads, Supreme Court decisions, laser technology, emergent nations, medicine, politics—all are as current as possible within the constraints imposed by publishing timetables. It is possible, for example, to find clear information on trends in education. Open classroom, teacher tenure, teacher strikes, and the National Education Association are all covered.

There are, however, a few instances of time lag. The article *Memory* is devoid of dates, and recent tests devised to test retention are not cited, nor is the neurological basis of memory. *Cognitive dissonance* is an index term, but Leon Festinger, who developed the concept, is not treated in the set. Finally, in common with all other sets directed to youngsters and young adults, contemporary serious music composers are not adequately represented. Omitted are George Crumb, Carl Orff, Krzysztof Penderecki—all prominent present-day writers of music.

Quality. Geographical articles account for about 21 percent

of the total content of *World Book* and generally contain more than 775 words. Among group two encyclopedias, only *Compton's* has longer articles in this category. *World Book's* biographical and many specific topical coverages average slightly over 200 words in length. In the social sciences and sciences, cultural lag, social mobility, suicide, and the various aspects of conservation and pollution receive current and complete representation. In psychology *World Book* was the only encyclopedia to clearly differentiate between infantile and other forms of autism and was also unique in its inclusion of a reference to Erik H. Erikson. The article *Schizophrenia* notes that this mental illness is no longer seen as synonymous with split personality. Many of these articles extend beyond mere definition to rather full explanations of difficult concepts and theories.

Biographical treatments in *World Book* sometimes fall short of this standard, perhaps for the sake of brevity. Examples of this are the articles on Maximilian and Darwin. More dates are necessary for Maximilian's life story to make sense to a modern-day reader. To comprehend his importance in Mexican history, one should know that he was made emperor in 1864, that he left France in 1867 after the U.S. sent troops to the Mexican border, and that Carlotta sought help from both Napoleon III and Pope Pius IX unsuccessfully. Only with these bits of contextual information does his personal impact register properly. In Darwin's biography, there is no explanation of his theory of natural selection. Edmund Burke, Thomas Paine, and Machiavelli are other figures not treated in sufficient depth to satisfy the panel.

Style. The style of *World Book* melds liveliness, clarity, and appropriateness for the intended user better than most other encyclopedias. The editors are successful in simultaneously dealing adequately with abstruse subjects; writing at a level not patronizing to the adult; and keeping vocabulary sentence structure and length, sequencing, and conceptual development within the reach of students at the intermediate level. A controlled vocabulary developed by Edgar Dale is employed in the text, and articles are tested on students during their evolution towards completion. Thus, the language and style of articles are matched against the reading levels of children apt to encounter the subjects in the curriculum. *World Book* also prints technical or advanced terms in italics and defines them parenthetically or within the text. In spite of this, some content can be used easily by nine- or ten-year-olds, while for younger children it may still pose difficulties.

Bibliographies. While bibliographies are provided for many of *World Book's* major articles, an additional 200 listings are incorporated in the reading and study guides scattered throughout the Index volume. Nonprint as well as written sources are cited. Superior bibliographies are appended to articles on Ruth Benedict, Leonardo DaVinci, Eisenhower, and Dickens. Usually the listings are divided into two levels of readings, one for younger and the other for more advanced users.

Most of the bibliographies for major subjects, e.g., prehistoric man, democracy, urban space, and painting, contain ample representation of current works. A few listings, however, have been allowed to lag. The bibliography for *Woman Suffrage* overlooks several key titles published in the past decade. While the listing for *Economics* in the Reading and Study Guide includes 12 items (3 of which are nonprint), none of them was produced after 1970. *Evolution* has 17 citations, only 4 of which are post-1965 titles; and *Beethoven*, despite the effusion of bicentennial works appearing in 1970, contains nothing published later than 1967. The panel noted that the bibliographies appended to articles are generally more current than those appearing in association with the reading and study guides.

Illustrations. Of *World Book's* 29,000 illustrations, slightly more than 40 percent are in full color. Only the *New Caxton* displays more emphasis on high-quality reproductions of original artworks and views of natural settings. Color is used not in

a splashy way but instead is intermixed with black-and-white photographs so that mind and eye are not overwhelmed. In the article *Painting*, 118 illustrations are presented within its 64 pages. Typical of the variety of illustrations are those appearing in the article *Aztec*. They run the gamut from a thatched hut to warriors in full dress, a cooking vessel and a mirror.

Resources of various museums, among them the Royal Ontario Museum in Toronto, American Museum of Natural History in New York, and Field Museum of Natural History in Chicago, are used to advantage in the depiction of natural subjects in such articles as *Animal*, *Insect*, *Spider*, and *Tree*. Technical topics and processes are often accompanied by diagrams, e.g., coal extraction, the operation of canal locks, DNA, electoral college, and photosynthesis. Most important biographical articles are enhanced with portraits of the subject; those on U.S. presidents generally contain numerous photographs illustrating various phases of their lives.

Not all illustrations are entirely successful. The seven photographs of audiovisual aids in the article on this subject do not significantly extend one's knowledge of audiovisual equipment; the photograph of the Rosetta Stone is unclear and dark, and lacks sufficient explanation in its caption. Machiavelli is shown as a statue figure with head bowed so that only a rather hazy notion of his appearance is conveyed.

Maps in *World Book* have been created so that they appear integral to the set in terms of size, color, placement, scale, and captioning. The maintenance of a full-time cartographic staff has resulted in maps that fit in and look less like appendages than is the case in some of the other sets. In the articles *Frog* and *Human Body*, *World Book* utilizes transparent overlays to show anatomical structure and physiological features.

Physical Format. Covers are in dark red with gold letters and numbers that stand out clearly on the spine where they are stamped on navy blue panels. Pages stay in place when volumes are open. The paper is heavyweight, smooth, opaque, offering excellent contrast with text and visuals. The type is tasteful and legible, and page layouts are diverse, imaginative, and efficiently designed to assist use. Margins are adequate and the bookmaker's art is generally evident. However, several of the volumes (*A*, *M*, *P*) have expanded to the point where young users may find them cumbersome.

Special Features. A specialty of *World Book* is its conscientious and comprehensive pulse-taking of classroom reaction to its articles and their relevance to the curriculum in a cross section of 300 schools. (Dec. 15, 1978, p. 714)

Young students encyclopedia.

20v. New York, Funk & Wagnalls, 1973. illus. maps. charts. 26cm. vol. 1 29c, v.2-20, \$1.89 each.

Authority. A separate but almost identical version of this encyclopedia has been published by a Xerox Corporation subsidiary, American Education Publications. The latter publication was not available for examination; only the Funk & Wagnalls edition is being considered here. Leonard Dal Negro is the project director for the work, which was issued in 1972. Seventeen curriculum advisors, mostly academic staff and educators, assisted with the preparation of articles in *Young Students Encyclopedia*. The 40 contributors include free-lance writers, authors of children's books, editors, a musician, museum curator, and representatives of various professions. Articles for which these contributors are primarily responsible are identified following the listing of their names in the first volume. All articles are unsigned, and most are written by the staff.

Arrangement. The articles in *Young Students* are arranged letter by letter. The encyclopedia is particularly well equipped with cross-references (more than 10,000) and see also references. The 78-page Index, with its approximately 15,000 entries, was found to be especially effective. Along with its entries it provides an explanation of the organization of the work, clear

advice to users, and incidental information, such as birth and death dates, scientific classifications for plants and animals, and pronunciations. Very few errors were noted in the Index.

Subject Coverage. Topics in *Young Students* indicate a sensitivity to a seven-to-thirteen-year-old child's range of interests and an awareness of curriculum in the intermediate grades. There are articles on scouting organizations, the Civil Air Patrol, 4-H Clubs, puppetry, model making, and stamp collecting. Sports and games and pets are well represented in specific and general articles. The arts, sciences, social issues, natural history, biography, and geography appear to receive appropriate attention. Both tone and content are in tune with present-day children's educational needs.

Accuracy. Within its modest scope, *Young Students* offers reliable information. Very few errors were noted by the panel.

Objectivity. *Young Students* is progressive in its point of view. Women, blacks, persons from other countries, conservation, industrial pollution, and "mood modifiers" (i.e., hallucinogens) are discussed in dispassionate language. Although the tone of the set is more liberal than that of other encyclopedias directed to young children, it surprisingly offers little coverage of women's roles in politics. Further, the treatment of *Northern Ireland* fails to present the Protestant point of view. The panel found that *Young Students* contains proportionately more pictures of young children and women than the other encyclopedias in group one.

Recency. Because *Young Students* was first published in 1973, its facts are generally up to date in the sciences, American music and art, politics, and issues close to the public conscience. However, sports records in baseball and track are not current, and recent political events in foreign countries are sometimes overlooked. The article *Ku Klux Klan* is out of date, for example, with no reference to the Klan's actions since the Civil War. The National Organization for Women (NOW) is mentioned, but its coverage is too brief and somewhat stale. Unless this generally superior set adopts a careful revision policy, it may lag behind other encyclopedias of its type in currency.

Quality. Articles in *Young Students* are brief, usually between 300 and 600 words. There are instances where important details are missed. In *Juvenile Delinquency*, for example, no distinction is made between legal and common definitions; *Conservation* includes no references to wildlife or energy conservation. Domestic and wild cats are adequately treated, but *Birds* contains insufficient material to satisfy the average child's curiosity. *Beethoven*, likewise, dwells too much upon speculation about the composer's circumstances and personality and has nothing specific to say about his works. On the other hand, biographies of Van Gogh and General MacArthur are well-handled, succinct and objective. Biographies of sports figures are also strong; indeed, there are more of them in *Young Students* than in some of the other group one sets. The panel was particularly impressed with substantive articles on socialism, telescopes, and Russian history. Further, they found this series of small articles adequate for exposition of key ideas about plants; *Plant*, *Plant Breeding*, *Plant Diseases*, *Plant Distribution*, *Plant Kingdom*, *Plant Products*, and *Plants of the Past*. Articles dealing with X-rays, the human skeleton, digestion, magnetism, migration, and the atom pinpoint basic concepts. In summary, skillful editing within the limited space results in generally satisfying coverage of most topics.

Style. The writing in *Young Students* is easily understood. Sentences are short and not as frequently punctuated with commas as are sentences in other encyclopedias. The language is simple but not patronizing. Expositions start at the reader's level, and ideas are developed gradually, with new words or concepts italicized and defined in words seven- to thirteen-year-old children can comprehend.

Topics familiar to most children are written here in simple language; unfamiliar and more subtle subjects are set forth in

more advanced vocabulary. Therefore, some segments of coverage may be out of reach for younger children, a problem not encountered in encyclopedias for which vocabulary levels are kept within narrow limits. Although most passages in *Young Students* are easy to follow and effectively paced, there are a few exceptions. *Northern Ireland* begins with history, moves on to major cities and industry, and then backtracks to history. In *Lenin*, Kerensky and his followers are dubbed "moderate revolutionaries." Such subtleties are unusual.

Bibliographies. None.

Illustrations. Almost every entry in *Young Students* is reinforced by a graphic of some kind—a photograph, drawing, chart, map, or reproduction of a painting. A pleasing combination of black-and-white and color illustrations distinguishes the set. Throughout there is considerable attention given to generating rapport between reader and subject. Thus in the *Athletics* article, there are many photographs of children performing gymnastics; this makes it easy for the young reader to relate to the subject. One also finds a mixture of boy and girl athletes in sports articles, and the various races are well represented. Diagrams and explanatory charts, such as those of television transmission and cell structure, are usually in vigorous colors—purple, green, pink, orange. Many step-by-step directions are given, and illustrations clearly show details of construction and operation.

There are some minor failures. The picture of the United Nations building in *Community* gives no explanation of the U.N. and its functions and could therefore perplex a child. The photographs of freedom riders in *Civil Rights* (no identification is given of their purpose) and of freezing soldiers in Korea accompanying the article *Truman* do not effectively enhance the text. A few of the other illustrations are so dark or so small that important details are obscured. However, such disappointments are infrequent and *Young Students* stands only below the *New Book of Knowledge* in the quality, variety, and imaginative exploitations of graphics. The maps, produced by Pictograph

Corporation, are not so effective because they lack sufficient place-names, political divisions, and topographical and other details.

Physical Format. Each 160-page volume has a bright orange pyroxylin-coated binding. The front cover is decorated with a pattern of squares and oblongs, some in plain colors (yellow, blue, yellow, purple) and others containing photographs taken from the body of the volume. The glued binding is not very sturdy, and pages may become loose after heavy use. Also, pages do not lie flat when volumes are in use. The black letters on the spine are very legible, with volume numbers and word ranges easily seen from a distance. Paper quality is good; ample line spacing and large readable type make the text appealing to the child.

Special Attributes. A feature of *Young Students* is the inclusion of suggested activities for children with directions printed in blue. For example, appended to *Herbs and Spices* are directions on growing one's own herb garden. There are also references to cooking and food. Under *Spinning* and *Weaving*, there are instructions on how to build a simple loom and on how to weave. These sections are a definite plus for this set. In addition, many children's games receive separate articles, including diagrams, e.g., "Swat," "Who Am I?," "Who's Got the Ring?," and "Tick Tack Toe." Questions and activities take into account the child's ability, coordination, span of interest, and experiential involvement that can in turn stimulate further reading. *Young Students* also has 'nuggets' or little boxes in the margins presenting tidbits of information, some of which are amusing and readily quotable. Next to *Montana* is a reminder that its border looks like Richard Nixon's profile; adjacent to *Burbank* is the reminder that he developed a "stoneless" plum (the plumcot) and an almost transparent blackberry; and within the *Advertising* article is a note indicating that the barber sign originated as a red pole "wrapped with a white bandage as a symbol of bloodletting, which barbers used to do when it was thought to cure illness."

(Dec. 1, 1978, p. 640)

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